

AVX High Reliability Tantalum Capacitors



Version 12.2

AVX
A KYOCERA GROUP COMPANY

MIL-PRF-55365
CWR09 / 19 / 29 CWR11 CWR15
DSCC 90158 DSCC 07016 DSCC 04053
DSCC 93026
AS 9100
ESCC 3012
SRC 9000



AVX Biddeford is recognized within the [medical device and military/aerospace](#) markets as the Premier Supplier of Tantalum Capacitors for their most demanding applications



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INTRODUCTION

The Biddeford facility within the AVX Tantalum Division is the leading supplier of high reliability tantalum chips to the medical, military and aerospace industry.

As tantalum technology continues to develop, we are able to offer extended ratings providing more downsizing opportunities, higher capacitance ratings, new case sizes and Low ESR options for critical output filtering applications. Combining this with in-line reliability grading capability for all chip capacitor series, we are able to supply these products to the most demanding applications.

Based on the core qualifications maintained for CWR09, CWR19/29, CWR11 and CWR15 product families, new products are now available utilizing the latest advances in tantalum technology, which enable PCB downsizing and component count reduction, yet which incorporate manufacture & test in accordance with MIL-PRF-55365 and reliability options from standard to "D" Weibull reliability grade.

A special facility within the plant enables the production of application specific modules and arrays, providing custom solutions for specialized requirements.

A new axial leaded wet tantalum, TWA series, has been introduced. This utilizes a unique cathode system that enables the manufacture of higher capacitance / voltage ratings than previously available in the industry. TWA series is qualified to DSCC 93026 Rev P, which has been updated to include some of the new high capacitance ratings available.

This catalog provides details for the latest product families and provides the necessary part numbering information to allow users to tailor any of these products to their own requirements.

COTS-PLUS TANTALUM CHIP – WEIBULL GRADE: EXTENDED RANGE/LOW ESR SERIES

These series have been developed in response to the "Commercial Off The Shelf" initiative taken by many military users to enable cost effective procurement of current technologies.

They are based on TAZ (CWR09/19/29), TBJ (CWR11) & TBC (CWR15) form factors. Leadership in tantalum technology has enabled the introduction of extended capacitance/voltage ratings for all standard case sizes, giving the designer scope for downsizing existing assemblies and reducing component count. To reduce time to market for the introduction of extended CV ratings into military applications, these parts are supplied with Weibull grading and Group A / surge options in accordance with MIL-PRF-55365, but are not JAN branded. These parts can also be supplied to Source Control Drawings for specific military requirements. A standard non-established reliability level is available, together with the options of 100% testing to Weibull "B", "C" or "D" grade. Other options include ambient or high/low temperature surge, additional Group A conformance testing (to MIL-PRF-55365 or alternative) and Low ESR ratings below current MIL-PRF-55365 specification limits.

Extended case sizes beyond the CWR standards are also available, especially targeted to high capacitance power supply filtering applications.

For TBJ series family case sizes, the new DSCC drawing 07016, superceding 95158, lists all available Low ESR ratings with full Weibull Grading and MIL-PRF-55365 surge test options.

New additions to the AVX COTS-Plus portfolio are NBS & NBM series Oxicap™. Based on niobium oxide technology these series offer ideal solutions for lower voltage applications required by DSP and IC / ASIC bulk decoupling. This technology has the added advantage of a benign failure mode if ever subjected to forward overvoltage conditions.

MIL QPL - ESTABLISHED RELIABILITY

Going beyond the original CWR09 QPL ratings, the TAZ series now includes a new 63V rating. The new CWR19 & CWR29 TAZ series offer widely extended capacitance / voltage ratings. While the CWR09 remains available for all legacy programs with no planned obsolescence, CWR19 / 29 are recommended for all new designs, due to the opportunity to use a higher voltage rating in a given application or downsize a design to achieve real estate savings and weight reduction. CWR 19/29 are also available for ratings from 4 - 50V. Reliability levels up to and including "D" Weibull grading are available along with ambient and high/low temperature surge options. A new case size (X case) has been added to extend capacitance ratings to 470µF; for the larger case size (G, H and X case) low ESR options (to sub-100 mOhm levels) are available for critical power supply designs.

The new CWR15 series offers maximum capacitance / voltage ratings in micro miniature L (0603 equivalent), R (0805 equivalent) & A (1206 equivalent) sizes. These provide a unique opportunity for the designer to upgrade commercial designs using X5R ceramic to an equivalent capacitance / voltage / size rating in tantalum technology, with the additional benefits of established reliability, wider operating temperature range, improved temperature coefficient, no voltage coefficient, and elimination of piezo noise.

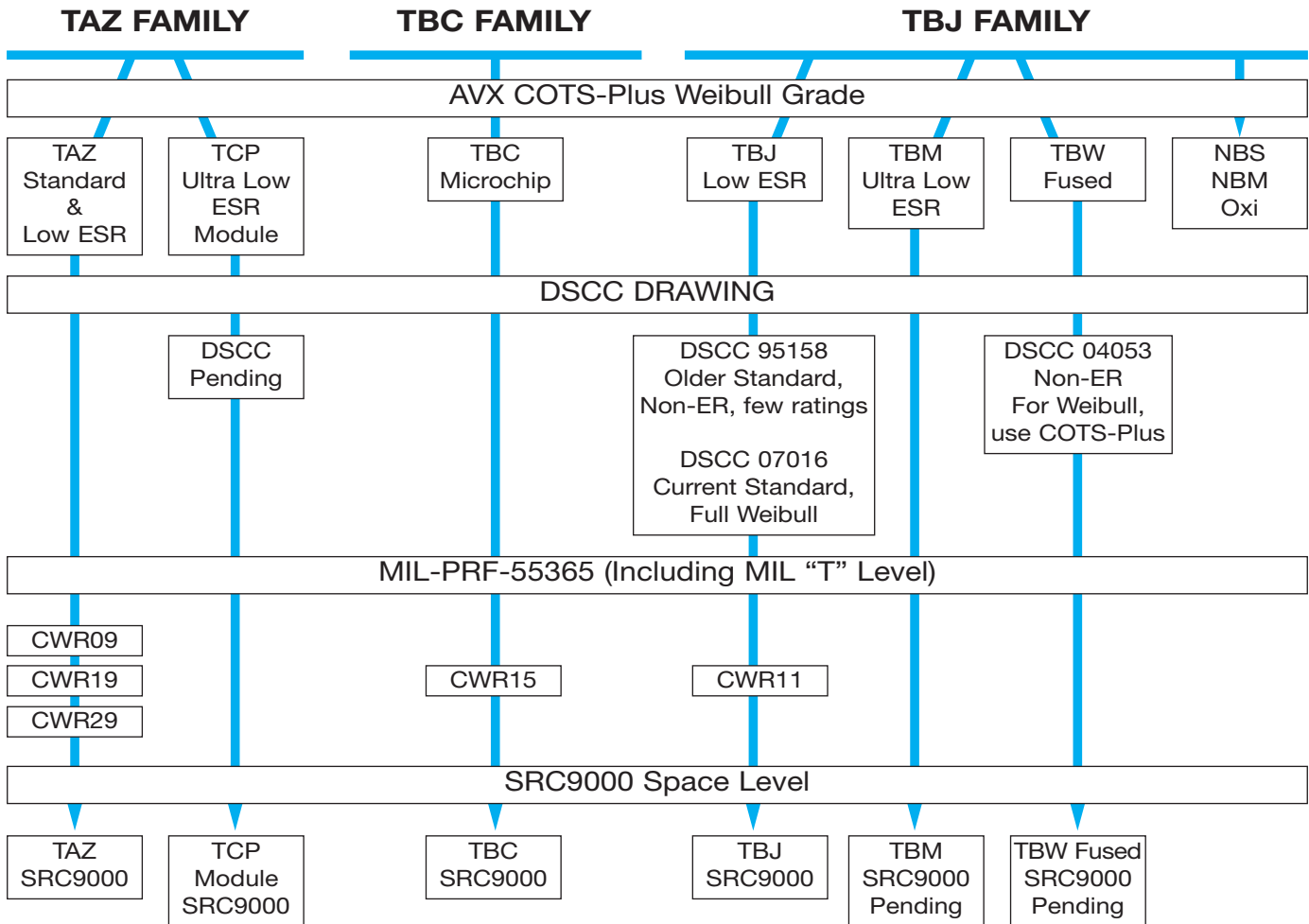
All Established Reliability series are MIL QPL listed ratings with both Group A & Group C tests maintained for MIL-PRF-55365 approval.

SPACE LEVEL, AVX SRC9000 & MIL T- LEVEL

For Space applications, additional testing is available with full details listed in our SRC9000 specification for Space Level products. As a minimum, SRC9000 requires both Weibull level voltage conditioning ("B", "C" & "D" Level) and surge test (options "B" or "C"). Additional tests include DPA, 100% Real Time X-Ray, surge voltage, hot DCL test, 3 sigma parametric test limits and additional Lot Conformance Test protocols.

While AVX SRC9000 remains the standard for Space Level, MIL-PRF-55365 now defines a new "T" level, which specifies C Weibull grade reliability minimum, "C" surge and also includes DPA, X-ray and 3-sigma test limits common to SRC9000.

HIGH RELIABILITY TANTALUM CHIP SPECIFICATIONS

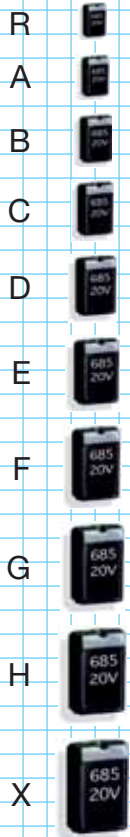


GROUP A TEST OPTIONS

TEST	Group A Testing comparison			
	AVX COTS-Plus	MIL-PRF-55365 QPL		AVX SRC9000 Space Level
		MIL Weibull B, C, D	MIL T Level	
100% Reflow	✓	✓	✓	✓
100% Thermal Shock	✓	✓	✓	✓
100% Weibull	Optional	Mandatory	Mandatory-Grade C min	Mandatory-Grade C min
100% Surge Current	Optional	Optional	Mandatory - C Level	Mandatory B or C Level
100% Electrical Testing	Custom Test Limits Available	To Specification Limits Only	+3 Sigma Limits	+3 Sigma Limits or Custom
100% Visual & Mechanical	✓	✓	✓	✓
Simulated Mounting, Rework and Lot Conformance				✓
Solderability Test 8hr. Steam Age	Optional 75% Coverage	Mandatory 90% Coverage	Mandatory 90% Coverage	Mandatory 90% Coverage
100% X-Ray			✓	✓
DPA - 1580 Destructive Physical Analysis			✓	✓
Surge Voltage				✓
Hot DC Leakage				✓
Temperature Stability	Optional	Mandatory	Mandatory	Mandatory

HIGH RELIABILITY TANTALUM CHIP PRODUCT FAMILY - DESIGN GUIDE

TAZ Series Case Size



TCP
Module

TAZ FAMILY SIZES:

CWR09, CWR19, CWR29 and TCP Modules

The TAZ family boasts the widest range of case sizes and fullest range of MIL-QPL qualifications of any tantalum chip family, making it the ideal choice for the MIL-Aerospace designer.

This family represents the most flexible of surface mount form factors. The case sizes originate from the original MIL chip sizes, enabling support for all legacy programs, but have been extended to include both smaller and larger case size options. There are ten case sizes covering the full Capacitance/Voltage range. Parts are suited to hybrid or PCB assembly, with case sizes A to E designed as low profile (.050" nom).

The Low ESR versions of the larger case sizes are ideally suited to power applications, and the H case is also footprint compatible with TBJ D / E case sizes.

This family is also the ideal replacement for conformal coated CWR06 styles in mechanically demanding applications.

TBJ FAMILY SIZES:

DSCC 95158, 07016 & CWR11; TBM Ultra-Low ESR and TBW Fused; NBS & NBM Low ESR Oxicap™.

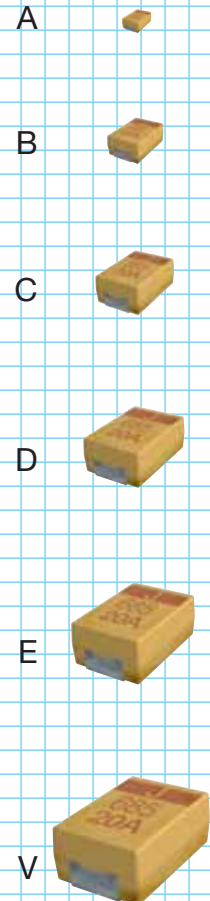
The TBJ family is based on EIA / Industrial standard sizes. While this series offers a more limited range of form factors (only 4 QPL case sizes, A through D, with an additional 2 case sizes (E & V) available to DSCC drawing), it does enable commercial designs / prototypes to be upgraded from commercial to COTS-Plus or even SRC9000 Space level for flight applications.

TBC FAMILY SIZES:

CWR15

TBC represents the world's smallest military approved tantalum chip capacitors technology. The case sizes are based on existing small case ceramic chip / resistor chip sizes; L, R & A case are equivalent to 0603, 0805 & 1206 sizes respectively, but with capacitance/voltage combinations significantly higher than available in 125°C rated ceramic devices. TBC represents a significant enabling technology for downsizing and reduced payload circuits for military and aerospace PCB, hybrid & flex circuit applications.

TBJ Series Case Size



TBC Series Case Sizes



PART NUMBERING, TEST & PACKAGING OPTIONS

Part Numbering:

AVX part numbers have 19 character fields. Standard characters are used to denote AVX series, case size, capacitance code, capacitance tolerance, voltage code and standard / Low ESR designator.

Test Designators:

The following table is a cross-reference between AVX and MIL designators for the various termination, test and inspection options available:

Symbol	Parameter	Condition	Designator	
			MIL	AVX
^	Termination Finish	Hot Solder Dip	C	8
		Solder Fused	K	0
		Solder Plated	H	H
		Gold	B	9
		Matte Sn	-	7
#	Lot inspection Conformance Level	MIL QPL (JAN brand)	-	M
		DSCC Dwg	-	D
		Lab/SCD/SRC9000	-	L
		Standard	-	S
++	Surge Current Test (also used for custom requirements)	No Surge	Z	00
		10 Cycles Ambient	A	23
		10 Cycles -55°C & +85°C	B	24
		10 Cycles -55°C & +85°C Pre-Weibull	C	45
@	Voltage Conditioning (Reliability) Grade	Non ER	A	Z
		B Weibull	B	B
		C Weibull	C	C
		D Weibull	D	D
*	Capacitance Tolerance	±5%	J	J
		±10%	K	K
		±20%	M	M
0	AVX SCD Designator	0 = N/A	N/A	0
		9 = SRC9000	N/A	9

Packaging Designators:

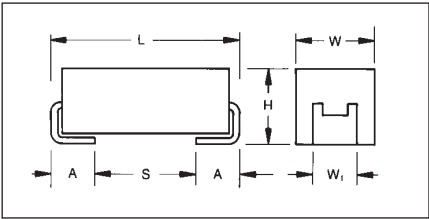
Due to the wide range of mounting processes that can be used for these products, there are many packaging options including bulk, tape / reel and waffle pack. Full dimensional information and packaging quantities are available in the packaging section (Applications Guide). Custom packaging is available for some product series (e.g. non-modular reel quantities, inverted in waffle (for wire bonding), special bar coding requirements, etc.). Please contact factory for custom requirements.

Symbol	Parameter	Condition	Designator	
			MIL	AVX
□	Bulk	Bulk	Default	B
		Bulk - ESD Packaging	-	K
		Bulk - Clear Packaging	-	A
		Bulk Desiccant Moisture Barrier Packaging with HIC Card	-	E
	Tape & Reel	4" Reel	TR/4	X
		7" Reel	TR/7	R
		7" Reel - Clear Packaging	-	D
		7" Reel - Desiccant Moisture Barrier Packaging with HIC Card	-	G
		13" Reel	TR/13	S
	Waffle Pack	Waffle Pack	W	W
		Waffle - ESD Packaging	-	L
		Waffle - Clear Packaging	-	C
		Waffle - Desiccant Moisture Barrier Packaging with HIC Card	-	F

TAZ Series



CWR09 - MIL-PRF-55365/4 Established Reliability, COTS-Plus & Space Level



MARKING

(White marking on black body)



Polarity Stripe (+)

**Capacitance Code
Rated Voltage**

This is the original high reliability molded tantalum chip series and the case sizes still represent the most flexible of surface mount form factors. TAZ offers nine case sizes, eight of which (A through H) are fully qualified to MIL-PRF-55365/4, and also includes the original sub-miniature R case (non-QPL).

This series is fully interchangeable with CWR06 conformal types, while offering the advantages of molded body / compliant termination construction (ensuring no TCE mismatch with any substrate). This construction is compatible with a wide range of SMT board assembly processes including wave or reflow solder, conductive epoxy or compression bonding techniques.

The parts also carry full polarity and capacitance / voltage marking. The five smaller cases are characterized by their low profile construction, with the A case being

the world's smallest molded military tantalum chip.

All 4V to 50V ratings are qualified to MIL-PRF-55365 Weibull "B", "C", "D" and "T" levels, with all surge options ("A", "B" & "C") available, and a new COTS-Plus 63V rating has been introduced.

For Space Level applications, AVX SRC 9000 qualification is recommended (see ratings table for part number availability).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these are "H", "K", "C" and "B" termination, respectively, per MIL-PRF-55365). In addition, the molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of NASA SP-R-0022A.

CASE DIMENSIONS:

millimeters (inches)

Case Code	Length (L) ±0.38 (0.015)	Width (W) ±0.38 (0.015)	Height (H) ±0.38 (0.015)	Term. Width (W _t)	Term. Length (A) ±0.13 (0.005)	S min	Typical Weight (g)
R	2.05 (0.081) ±0.20 (0.008)	1.30 (0.051) +0.20 (0.008) -0.10 (0.004)	1.20 (0.047) max	1.0±0.10 (0.039±0.004)	0.50 (0.020) +0.30 (0.012) -0.20 (0.008)	0.71 (0.028)	0.010
A	2.54 (0.100)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	0.38 (0.015)	0.016
B	3.81 (0.150)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	1.65 (0.065)	0.025
C	5.08 (0.200)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	2.92 (0.115)	0.035
D	3.81 (0.150)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	1.65 (0.065)	0.045
E	5.08 (0.200)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	2.92 (0.115)	0.065
F	5.59 (0.220)	3.43 (0.135)	1.78 (0.070)	3.30±0.13 (0.130±0.005)	0.76 (0.030)	3.43 (0.135)	0.125
G	6.73 (0.265)	2.79 (0.110)	2.79 (0.110)	2.67±0.13 (0.105±0.005)	1.27 (0.050)	3.56 (0.140)	0.205
H	7.24 (0.285)	3.81 (0.150)	2.79 (0.110)	3.68+0.13/-0.51 (0.145+0.005/-0.020)	1.27 (0.050)	4.06 (0.160)	0.335

CWR09-MIL-PRF 55365/11

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) at 85°C								
µF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)	25V (K)	35V (M)	50V (N)	63V
0.10	104								A	
0.15	154								A	
0.22	224							A	B	
0.33	334	R		R			A		B	
0.47	474			R		A		B	C	
0.68	684				A	B	B	C	D	
1.0	105			A/R		B	C	D	E	
1.5	155		A		B	C	D	E	F	
2.2	225	A/R		B	C	D	E		F	F*
3.3	335		B	C	D	E		F	G	
4.7	475	B	C	D	E		F	G	H	
6.8	685	C	D	E		F	G	H		
10	106	D	E		F	G	H			
15	156	E		F	G	H				
22	226		F		G	H				
33	336	F		G	H					
47	476		G	H						
68	686	G	H							
100	107	H								
150	157									
220	227									

* Z, B Reliability Levels only available.



HOW TO ORDER

COTS-PLUS & MIL QPL (CWR09):

TAZ	H	686	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A M = MIL (JAN) CWR09	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

CWR09 P/N CROSS REFERENCE:

CWR09	D	^	686	*	@	+	□
Type	Voltage Code C = 4Vdc D = 6Vdc F = 10Vdc H = 15Vdc J = 20Vdc K = 25Vdc M = 35Vdc N = 50Vdc = 63Vdc	Termination Finish H = Solder Plated K = Solder Fused Dipped B = Gold Plated	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level A = Non-ER	Surge Test Option A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C C = 10 cycles, -55°C & +85°C before Weibull If blank, None required	Packaging Bulk = Standard TR = 7" T&R TR13 = 13" T&R W = Waffle See page 5 for additional packaging options.

SPACE LEVEL OPTIONS TO SRC9000*:

TAZ	H	686	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.

TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C										
Capacitance Range:	0.1 μF to 100 μF										
Capacitance Tolerance:	±5%; ±10%; ±20%										
Rated Voltage: (V _R)	≤85°C:	4	6	10	15	20	25	35	50	63	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	17	23	33	42	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	32	46	65	82	
	125°C:	3.4	5	8	13	16	20	28	40	50	
Temperature Range:	-55°C to +125°C										



TAZ Series



CWR09 - MIL-PRF-55365/4 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating per MIL-PRF-55365/4									Typical Ripple Data by Rating							
			Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
CWR09 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case	+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)										
	TAZ R 334 * 004 C □ # @ 0 ^ ++		R	0.33	4	45	1	10	12	6	8	8	0.030	0.03	0.02	0.01	1.16	1.05	0.46
	TAZ R 225 * 004 C □ # @ 0 ^ ++		R	2.2	4	12	1	10	12	6	8	8	0.030	0.05	0.05	0.02	0.60	0.54	0.24
	TAZ A 225 * 004 C □ # @ 0 ^ ++	TAZ A 225 * 004 C □ L @ 9 ^ ++	A	2.2	4	8	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.63	0.57	0.25
CWR09C^475* @+	TAZ B 475 * 004 C □ # @ 0 ^ ++	TAZ B 475 * 004 C □ L @ 9 ^ ++	B	4.7	4	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR09C^685* @+	TAZ C 685 * 004 C □ # @ 0 ^ ++	TAZ C 685 * 004 C □ L @ 9 ^ ++	C	6.8	4	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR09C^106* @+	TAZ D 106 * 004 C □ # @ 0 ^ ++	TAZ D 106 * 004 C □ L @ 9 ^ ++	D	10	4	4	1	10	12	8	8	10	0.080	0.14	0.13	0.06	0.57	0.51	0.23
CWR09C^156* @+	TAZ E 156 * 004 C □ # @ 0 ^ ++	TAZ E 156 * 004 C □ L @ 9 ^ ++	E	15	4	3.5	1	10	12	8	10	12	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR09C^336* @+	TAZ F 336 * 004 C □ # @ 0 ^ ++	TAZ F 336 * 004 C □ L @ 9 ^ ++	F	33	4	2.2	2	20	24	8	10	12	0.100	0.21	0.19	0.09	0.47	0.42	0.19
CWR09C^686* @+	TAZ G 686 * 004 C □ # @ 0 ^ ++	TAZ G 686 * 004 C □ L @ 9 ^ ++	G	68	4	1.1	3	30	36	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR09C^107* @+	TAZ H 107 * 004 C □ # @ 0 ^ ++	TAZ H 107 * 004 C □ L @ 9 ^ ++	H	100	4	0.9	4	40	48	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR09D^155* @+	TAZ A 155 * 006 C □ # @ 0 ^ ++	TAZ A 155 * 006 C □ L @ 9 ^ ++	A	1.5	6	8	1	10	12	6	8	8	0.060	0.08	0.07	0.03	0.63	0.57	0.25
CWR09D^335* @+	TAZ B 335 * 006 C □ # @ 0 ^ ++	TAZ B 335 * 006 C □ L @ 9 ^ ++	B	3.3	6	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR09D^475* @+	TAZ C 475 * 006 C □ # @ 0 ^ ++	TAZ C 475 * 006 C □ L @ 9 ^ ++	C	4.7	6	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR09D^685* @+	TAZ D 685 * 006 C □ # @ 0 ^ ++	TAZ D 685 * 006 C □ L @ 9 ^ ++	D	6.8	6	4.5	1	10	12	6	8	8	0.080	0.13	0.12	0.05	0.60	0.54	0.24
CWR09D^106* @+	TAZ E 106 * 006 C □ # @ 0 ^ ++	TAZ E 106 * 006 C □ L @ 9 ^ ++	E	10	6	3.5	1	10	12	8	10	12	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR09D^226* @+	TAZ F 226 * 006 C □ # @ 0 ^ ++	TAZ F 226 * 006 C □ L @ 9 ^ ++	F	22	6	2.2	2	20	24	8	10	12	0.100	0.21	0.19	0.09	0.47	0.42	0.19
CWR09D^476* @+	TAZ G 476 * 006 C □ # @ 0 ^ ++	TAZ G 476 * 006 C □ L @ 9 ^ ++	G	47	6	1.1	3	30	36	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR09D^686* @+	TAZ H 686 * 006 C □ # @ 0 ^ ++	TAZ H 686 * 006 C □ L @ 9 ^ ++	H	68	6	0.9	4	40	48	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
	TAZ R 334 * 010 C □ # @ 0 ^ ++		R	0.33	10	50	1	10	12	6	8	8	0.030	0.02	0.02	0.01	1.22	1.10	0.49
	TAZ R 474 * 010 C □ # @ 0 ^ ++		R	0.47	10	50	1	10	12	6	8	8	0.030	0.02	0.02	0.01	1.22	1.10	0.49
	TAZ R 105 * 010 C □ # @ 0 ^ ++		R	1	10	10	1	10	12	6	8	8	0.030	0.05	0.05	0.02	0.55	0.49	0.22
CWR09F^105* @+	TAZ A 105 * 010 C □ # @ 0 ^ ++	TAZ A 105 * 010 C □ L @ 9 ^ ++	A	1	10	10	1	10	12	6	8	8	0.050	0.07	0.06	0.03	0.71	0.64	0.28
CWR09F^225* @+	TAZ B 225 * 010 C □ # @ 0 ^ ++	TAZ B 225 * 010 C □ L @ 9 ^ ++	B	2.2	10	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR09F^335* @+	TAZ C 335 * 010 C □ # @ 0 ^ ++	TAZ C 335 * 010 C □ L @ 9 ^ ++	C	3.3	10	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR09F^475* @+	TAZ D 475 * 010 C □ # @ 0 ^ ++	TAZ D 475 * 010 C □ L @ 9 ^ ++	D	4.7	10	4.5	1	10	12	6	8	8	0.080	0.13	0.12	0.05	0.60	0.54	0.24
CWR09F^685* @+	TAZ E 685 * 010 C □ # @ 0 ^ ++	TAZ E 685 * 010 C □ L @ 9 ^ ++	E	6.8	10	3.5	1	10	12	6	8	8	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR09F^156* @+	TAZ F 156 * 010 C □ # @ 0 ^ ++	TAZ F 156 * 010 C □ L @ 9 ^ ++	F	15	10	2.5	2	20	24	8	10	12	0.100	0.20	0.18	0.08	0.50	0.45	0.20
CWR09F^336* @+	TAZ G 336 * 010 C □ # @ 0 ^ ++	TAZ G 336 * 010 C □ L @ 9 ^ ++	G	33	10	1.1	3	30	36	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR09F^476* @+	TAZ H 476 * 010 C □ # @ 0 ^ ++	TAZ H 476 * 010 C □ L @ 9 ^ ++	H	47	10	0.9	5	50	60	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR09H^684* @+	TAZ A 684 * 015 C □ # @ 0 ^ ++	TAZ A 684 * 015 C □ L @ 9 ^ ++	A	0.68	15	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR09H^155* @+	TAZ B 155 * 015 C □ # @ 0 ^ ++	TAZ B 155 * 015 C □ L @ 9 ^ ++	B	1.5	15	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR09H^225* @+	TAZ C 225 * 015 C □ # @ 0 ^ ++	TAZ C 225 * 015 C □ L @ 9 ^ ++	C	2.2	15	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR09H^335* @+	TAZ D 335 * 015 C □ # @ 0 ^ ++	TAZ D 335 * 015 C □ L @ 9 ^ ++	D	3.3	15	5	1	10	12	6	8	8	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR09H^475* @+	TAZ E 475 * 015 C □ # @ 0 ^ ++	TAZ E 475 * 015 C □ L @ 9 ^ ++	E	4.7	15	4	1	10	12	6	8	8	0.090	0.15	0.14	0.06	0.60	0.54	0.24
CWR09H^106* @+	TAZ F 106 * 015 C □ # @ 0 ^ ++	TAZ F 106 * 015 C □ L @ 9 ^ ++	F	10	15	2.5	2	20	24	6	8	8	0.100	0.20	0.18	0.08	0.50	0.45	0.20
CWR09H^226* @+	TAZ G 226 * 015 C □ # @ 0 ^ ++	TAZ G 226 * 015 C □ L @ 9 ^ ++	G	22	15	1.1	4	40	48	6	8	8	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR09H^336* @+	TAZ H 336 * 015 C □ # @ 0 ^ ++	TAZ H 336 * 015 C □ L @ 9 ^ ++	H	33	15	0.9	5	50	60	8	10	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR09J^474* @+	TAZ A 474 * 020 C □ # @ 0 ^ ++	TAZ A 474 * 020 C □ L @ 9 ^ ++	A	0.47	20	14	1	10	12	8	8	10	0.050	0.06	0.05	0.02	0.84	0.75	0.33
CWR09J^684* @+	TAZ B 684 * 020 C □ # @ 0 ^ ++	TAZ B 684 * 020 C □ L @ 9 ^ ++	B	0.68	20	10	1	10	12	6	8	8	0.070	0.08	0.08	0.03	0.84	0.75	0.33
CWR09J^105* @+	TAZ B 105 * 020 C □ # @ 0 ^ ++	TAZ B 105 * 020 C □ L @ 9 ^ ++	B	1	20	12	1	10	12	6	8	8	0.070	0.08	0.07	0.03	0.92	0.82	0.37
CWR09J^155* @+	TAZ C 155 * 020 C □ # @ 0 ^ ++	TAZ C 155 * 020 C □ L @ 9 ^ ++	C	1.5	20	6	1	10	12	6	8	8	0.075	0.11	0.10	0.04	0.67	0.60	0.27
CWR09J^225* @+	TAZ D 225 * 020 C □ # @ 0 ^ ++	TAZ D 225 * 020 C □ L @ 9 ^ ++	D	2.2	20	5	1	10	12	6	8	8	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR09J^335* @+	TAZ E 335 * 020 C □ # @ 0 ^ ++	TAZ E 335 * 020 C □ L @ 9 ^ ++	E	3.3	20	4	1	10	12	6	8	8	0.090	0.15	0.14	0.06	0.60	0.54	0.24
CWR09J^685* @+	TAZ F 685 * 020 C □ # @ 0 ^ ++	TAZ F 685 * 020 C □ L @ 9 ^ ++	F	6.8	20	2.4	2	20	24	6	8	8	0.100	0.20	0.18	0.08	0.49	0.44	0.20
CWR09J^156* @+	TAZ G 156 * 020 C □ # @ 0 ^ ++	TAZ G 156 * 020 C □ L @ 9 ^ ++	G	15	20	1.1	3	30	36	6	8	8	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR09J^226* @+	TAZ H 226 * 020 C □ # @ 0 ^ ++	TAZ H 226 * 020 C □ L @ 9 ^ ++	H	22	20	0.9	4	40	48	6	8	8	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR09K^334* @+	TAZ A 334 * 025 C □ # @ 0 ^ ++	TAZ A 334 * 025 C □ L @ 9 ^ ++	A	0.33	25	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR09K^684* @+	TAZ B 684 * 025 C □ # @ 0 ^ ++	TAZ B 684 * 025 C □ L @ 9 ^ ++	B	0.68	25	7.5	1	10	12	6	8	8	0.070	0.10	0.09	0.04	0.72	0.65	0.29
CWR09K^105* @+	TAZ C 105 * 025 C □ # @ 0 ^ ++	TAZ C 105 * 025 C □ L @ 9 ^ ++	C	1	25	6.5	1	10	12	6	8	8	0.075	0.11	0.10	0.04	0.70	0.63	0.28
CWR09K^155* @+	TAZ D 155 * 025 C □ # @ 0 ^ ++	TAZ D 155 * 025 C □ L @ 9 ^ ++	D	1.5	25	6.5	1	10	12	6	8	8	0.080	0.11	0.10	0.04	0.72	0.65	0.29
CWR09K^225* @+	TAZ E 225 * 025 C □ # @ 0 ^ ++	TAZ E 225 * 025 C □ L @ 9 ^ ++	E	2.2	25	3.5	1	10	12	6	8	8	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR09K^475* @+	TAZ F 475 * 025 C □ # @ 0 ^ ++	TAZ F 475 * 025 C □ L @ 9 ^ ++	F	4.7	25	2.5	2	20	24	6	8	8	0.100	0.20	0.18	0.08	0.50	0.45	0.20
CWR09K^685* @+	TAZ G 685 * 025 C □ # @ 0 ^ ++	TAZ G 685 * 025 C □ L @ 9 ^ ++	G	6.8	25	1.2	2	20	24	6	8	8	0.125	0.32	0.29	0.13	0.39	0.35	0.15
CWR09K^106* @+	TAZ G 106 * 025 C □ # @ 0 ^ ++	TAZ G 106 * 025 C □ L @ 9 ^ ++	G	10	25	1.4	3	30	36	6	8	8	0.125	0.3					

TAZ Series



CWR09 - MIL-PRF-55365/4 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating per MIL-PRF-55365/4									Typical Ripple Data by Rating							
			Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
						+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)								
CWR09 P/N	AVX MIL & COTS-Plus p/n	AVX SRC9000 P/N	Case	μF @ 25°C	V @ +85°C	Ohms @ +25°C	(μA)	(μA)	(μA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
CWR09M^224*0+	TAZ A 224 * 035 C □ # @ 0 ^ ++	TAZ A 224 * 035 C □ L @ 9 ^ ++	A	0.22	35	18	1	10	12	6	8	8	0.050	0.05	0.05	0.02	0.95	0.85	0.38
CWR09M^474*0+	TAZ B 474 * 035 C □ # @ 0 ^ ++	TAZ B 474 * 035 C □ L @ 9 ^ ++	B	0.47	35	10	1	10	12	6	8	8	0.070	0.08	0.08	0.03	0.84	0.75	0.33
CWR09M^684*0+	TAZ C 684 * 035 C □ # @ 0 ^ ++	TAZ C 684 * 035 C □ L @ 9 ^ ++	C	0.68	35	8	1	10	12	6	8	8	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR09M^105*0+	TAZ D 105 * 035 C □ # @ 0 ^ ++	TAZ D 105 * 035 C □ L @ 9 ^ ++	D	1	35	6.5	1	10	12	6	8	8	0.080	0.11	0.10	0.04	0.72	0.65	0.29
CWR09M^155*0+	TAZ E 155 * 035 C □ # @ 0 ^ ++	TAZ E 155 * 035 C □ L @ 9 ^ ++	E	1.5	35	4.5	1	10	12	6	8	8	0.090	0.14	0.13	0.06	0.64	0.57	0.25
CWR09M^335*0+	TAZ F 335 * 035 C □ # @ 0 ^ ++	TAZ F 335 * 035 C □ L @ 9 ^ ++	F	3.3	35	2.5	1	10	12	6	8	8	0.100	0.20	0.18	0.08	0.50	0.45	0.20
CWR09M^475*0+	TAZ G 475 * 035 C □ # @ 0 ^ ++	TAZ G 475 * 035 C □ L @ 9 ^ ++	G	4.7	35	1.5	2	20	24	6	8	8	0.125	0.29	0.26	0.12	0.43	0.39	0.17
CWR09M^685*0+	TAZ H 685 * 035 C □ # @ 0 ^ ++	TAZ H 685 * 035 C □ L @ 9 ^ ++	H	6.8	35	1.3	3	30	36	6	8	8	0.150	0.34	0.31	0.14	0.44	0.40	0.18
CWR09N^104*0+	TAZ A 104 * 050 C □ # @ 0 ^ ++	TAZ A 104 * 050 C □ L @ 9 ^ ++	A	0.1	50	22	1	10	12	6	8	8	0.050	0.05	0.04	0.02	1.05	0.94	0.42
CWR09N^154*0+	TAZ A 154 * 050 C □ # @ 0 ^ ++	TAZ A 154 * 050 C □ L @ 9 ^ ++	A	0.15	50	17	1	10	12	6	8	8	0.050	0.05	0.05	0.02	0.92	0.83	0.37
CWR09N^224*0+	TAZ B 224 * 050 C □ # @ 0 ^ ++	TAZ B 224 * 050 C □ L @ 9 ^ ++	B	0.22	50	14	1	10	12	6	8	8	0.070	0.07	0.06	0.03	0.99	0.89	0.40
CWR09N^334*0+	TAZ B 334 * 050 C □ # @ 0 ^ ++	TAZ B 334 * 050 C □ L @ 9 ^ ++	B	0.33	50	12	1	10	12	6	8	8	0.070	0.08	0.07	0.03	0.92	0.82	0.37
CWR09N^474*0+	TAZ C 474 * 050 C □ # @ 0 ^ ++	TAZ C 474 * 050 C □ L @ 9 ^ ++	C	0.47	50	8	1	10	12	6	8	8	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR09N^684*0+	TAZ D 684 * 050 C □ # @ 0 ^ ++	TAZ D 684 * 050 C □ L @ 9 ^ ++	D	0.68	50	7	1	10	12	6	8	8	0.080	0.11	0.10	0.04	0.75	0.67	0.30
CWR09N^105*0+	TAZ E 105 * 050 C □ # @ 0 ^ ++	TAZ E 105 * 050 C □ L @ 9 ^ ++	E	1	50	6	1	10	12	6	8	8	0.090	0.12	0.11	0.05	0.73	0.66	0.29
CWR09N^155*0+	TAZ F 155 * 050 C □ # @ 0 ^ ++	TAZ F 155 * 050 C □ L @ 9 ^ ++	F	1.5	50	4	1	10	12	6	8	8	0.100	0.16	0.14	0.06	0.63	0.57	0.25
CWR09N^225*0+	TAZ F 225 * 050 C □ # @ 0 ^ ++	TAZ F 225 * 050 C □ L @ 9 ^ ++	F	2.2	50	2.5	2	20	24	6	8	8	0.100	0.20	0.18	0.08	0.50	0.45	0.20
CWR09N^335*0+	TAZ G 335 * 050 C □ # @ 0 ^ ++	TAZ G 335 * 050 C □ L @ 9 ^ ++	G	3.3	50	2	2	20	24	6	8	8	0.125	0.25	0.23	0.10	0.50	0.45	0.20
CWR09N^475*0+	TAZ H 475 * 050 C □ # @ 0 ^ ++	TAZ H 475 * 050 C □ L @ 9 ^ ++	H	4.7	50	1.5	3	30	36	6	8	8	0.150	0.32	0.28	0.13	0.47	0.43	0.19
	TAZ F 225 * 063 C □ # @ 0 ^ ++		F	2.2	63	3	2.1	21	25.2	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22

* Z, B Reliability Levels only available.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

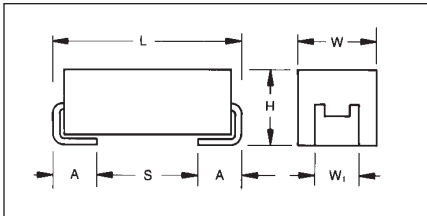
NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR19 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level



MARKING

(White marking on black body)



Polarity Stripe (+)

**Capacitance Code
Rated Voltage**

An extended range of capacitor ratings beyond CWR09 that is fully qualified to MIL-PRF-55365/11, this series represents the most flexible of surface mount form factors, offering nine case sizes (the original A through H of CWR09) and adds the new X case size.

The molded body / compliant termination construction ensures no TCE mismatch with any substrate. This construction is compatible with a wide range of SMT board assembly processes including wave or reflow solder, conductive epoxy or compression bonding techniques. The parts also carry full polarity and capacitance / voltage marking.

The four smaller cases are characterized by their low profile construction, with the

A case being the world's smallest molded military tantalum chip.

The series is qualified to MIL-PRF-55365 Weibull "B", "C", "D" and "T" levels, with all surge options ("A", "B" & "C") available.

For Space Level applications, AVX SRC 9000 qualification is recommended (see ratings table for part number availability).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these are "H", "K", "C" and "B" termination, respectively, per MIL-PRF-55365). In addition, the molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and out-gassing requirements of NASA SP-R-0022A.

CASE DIMENSIONS:

millimeters (inches)

Case Code	Length (L) ±0.38 (0.015)	Width (W) ±0.38 (0.015)	Height (H) ±0.38 (0.015)	Term. Width (W _t)	Term. Length (A) ±0.13 (0.005)	S min	Typical Weight (g)
A	2.54 (0.100)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	0.38 (0.015)	0.016
B	3.81 (0.150)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	1.65 (0.065)	0.025
C	5.08 (0.200)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	2.92 (0.115)	0.035
D	3.81 (0.150)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	1.65 (0.065)	0.045
E	5.08 (0.200)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	2.92 (0.115)	0.065
F	5.59 (0.220)	3.43 (0.135)	1.78 (0.070)	3.30±0.13 (0.130±0.005)	0.76 (0.030)	3.43 (0.135)	0.125
G	6.73 (0.265)	2.79 (0.110)	2.79 (0.110)	2.67±0.13 (0.105±0.005)	1.27 (0.050)	3.56 (0.140)	0.205
H	7.24 (0.285)	3.81 (0.150)	2.79 (0.110)	3.68+0.13/-0.51 (0.145+0.005/-0.020)	1.27 (0.050)	4.06 (0.160)	0.035
X	6.93 Max (0.273)	5.41 Max (0.213)	2.74 Max (0.108)	3.05±0.13 (0.120±0.005)	1.19 (0.047)	N/A	0.420

CWR19-MIL-PRF 55365/11

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage DC (V _R) at 85°C						
µF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)	25V (K)	35V (M)
0.10	104							
0.15	154							
0.22	224							
0.33	334							A
0.47	474						A	
0.68	684					A		
1.0	105				A	A	B	
1.5	155				A	B		
2.2	225			A	A	B	D	
3.3	335	A	A	A	B	D	E	
4.7	475	A	A	B/C	B/C/D	E		
6.8	685	A	B	B/C/D	D/E	E	F	G
10	106	B	B	B/C/D/E	D/E	E/F		H
15	156	B	B/D/E	D/E	E/F	F	G	
22	226	B/D	D/E	E	F	G	G/H	
33	336	D/E	E	F	F/G	H	H	
47	476	E	F	F/G	G/H	H/X		
68	686	E	F/G	G	G/H			
100	107	F	G	G/H	H			
150	157	G	G	H/X				
220	227	H	H	H				
330	337	H	H					



HOW TO ORDER

COTS-PLUS & MIL QPL (CWR19):

TAZ	H	227	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A M = MIL (JAN) CWR19	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

CWR19 P/N CROSS REFERENCE:

CWR19	D	^	227	*	@	H	+	□
Type	Voltage Code C = 4Vdc D = 6Vdc F = 10Vdc H = 15Vdc J = 20Vdc K = 25Vdc M = 35Vdc N = 50Vdc	Termination Finish H = Solder Plated K = Solder Fused C = Hot Solder Dipped B = Gold Plated	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level A = Non-ER	Case Size	Surge Test Option A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C C = 10 cycles, -55°C & +85°C before Weibull Z = None required	Packaging Bulk = Standard TR = 7" T&R TR13 = 13" T&R W = Waffle See page 5 for additional packaging options.

SPACE LEVEL OPTIONS TO SRC9000*:

TAZ	H	227	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	0.33 µF to 330 µF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage: (V _R)	≤85°C:	4	6	10	15	20	25	35	50	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	32	46	65	
	125°C:	3.4	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C									

TAZ Series



CWR19 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating per MIL-PRF-55365/11									Typical Ripple Data by Rating							
			Cap @ 120Hz µF @ 25°C	DC Rated Voltage @ +85°C V	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
CWR19 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case	+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)										
CWR19C^335^@A+□	TAZ A 335 * 004 C □ # @ 0 ^ ++	TAZ A 335 * 004 C □ L @ 9 ^ ++	A	3.3	4	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19C^475^@A+□	TAZ A 475 * 004 C □ # @ 0 ^ ++	TAZ A 475 * 004 C □ L @ 9 ^ ++	A	4.7	4	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19C^685^@A+□	TAZ A 685 * 004 C □ # @ 0 ^ ++	TAZ A 685 * 004 C □ L @ 9 ^ ++	A	6.8	4	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19C^106^@B+□	TAZ B 106 * 004 C □ # @ 0 ^ ++	TAZ B 106 * 004 C □ L @ 9 ^ ++	B	10	4	8	1	10	12	8	10	10	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19C^156^@B+□	TAZ B 156 * 004 C □ # @ 0 ^ ++	TAZ B 156 * 004 C □ L @ 9 ^ ++	B	15	4	8	1	10	12	8	10	10	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19C^226^@B+□	TAZ B 226 * 004 C □ # @ 0 ^ ++	TAZ B 226 * 004 C □ L @ 9 ^ ++	B	22	4	8	1	10	12	8	10	10	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19C^226^@D+□	TAZ D 226 * 004 C □ # @ 0 ^ ++	TAZ D 226 * 004 C □ L @ 9 ^ ++	D	22	4	4	1	10	12	8	10	12	0.080	0.14	0.13	0.06	0.57	0.51	0.23
CWR19C^336^@D+□	TAZ D 336 * 004 C □ # @ 0 ^ ++	TAZ D 336 * 004 C □ L @ 9 ^ ++	D	33	4	4	2	20	24	8	10	12	0.080	0.14	0.13	0.06	0.57	0.51	0.23
CWR19C^336^@E+□	TAZ E 336 * 004 C □ # @ 0 ^ ++	TAZ E 336 * 004 C □ L @ 9 ^ ++	E	33	4	3	2	20	24	8	10	12	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19C^476^@E+□	TAZ E 476 * 004 C □ # @ 0 ^ ++	TAZ E 476 * 004 C □ L @ 9 ^ ++	E	47	4	3	2	20	24	8	10	12	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19C^686^@E+□	TAZ E 686 * 004 C □ # @ 0 ^ ++	TAZ E 686 * 004 C □ L @ 9 ^ ++	E	68	4	3	3	30	36	8	10	12	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19C^107^@F+□	TAZ F 107 * 004 C □ # @ 0 ^ ++	TAZ F 107 * 004 C □ L @ 9 ^ ++	F	100	4	2	4	40	48	10	12	12	0.100	0.22	0.20	0.09	0.45	0.40	0.18
CWR19C^157^@G+□	TAZ G 157 * 004 C □ # @ 0 ^ ++	TAZ G 157 * 004 C □ L @ 9 ^ ++	G	150	4	1	6	60	72	10	12	12	0.125	0.35	0.32	0.14	0.35	0.32	0.14
CWR19C^227^@H+□	TAZ H 227 * 004 C □ # @ 0 ^ ++	TAZ H 227 * 004 C □ L @ 9 ^ ++	H	220	4	1	8	80	96	10	12	12	0.150	0.39	0.35	0.15	0.39	0.35	0.15
CWR19C^337^@H+□	TAZ H 337 * 004 C □ # @ 0 ^ ++	TAZ H 337 * 004 C □ L @ 9 ^ ++	H	330	4	0.9	10	100	120	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19D^335^@A+□	TAZ A 335 * 006 C □ # @ 0 ^ ++	TAZ A 335 * 006 C □ L @ 9 ^ ++	A	3.3	6	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19D^475^@A+□	TAZ A 475 * 006 C □ # @ 0 ^ ++	TAZ A 475 * 006 C □ L @ 9 ^ ++	A	4.7	6	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19D^685^@B+□	TAZ B 685 * 006 C □ # @ 0 ^ ++	TAZ B 685 * 006 C □ L @ 9 ^ ++	B	6.8	6	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19D^106^@B+□	TAZ B 106 * 006 C □ # @ 0 ^ ++	TAZ B 106 * 006 C □ L @ 9 ^ ++	B	10	6	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19D^156^@B+□	TAZ B 156 * 006 C □ # @ 0 ^ ++	TAZ B 156 * 006 C □ L @ 9 ^ ++	B	15	6	8	1	10	12	8	10	10	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19D^156^@D+□	TAZ D 156 * 006 C □ # @ 0 ^ ++	TAZ D 156 * 006 C □ L @ 9 ^ ++	D	15	6	5	1	10	12	8	10	12	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR19D^226^@D+□	TAZ D 226 * 006 C □ # @ 0 ^ ++	TAZ D 226 * 006 C □ L @ 9 ^ ++	D	22	6	5	1	10	12	6	8	8	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR19D^156^@E+□	TAZ E 156 * 006 C □ # @ 0 ^ ++	TAZ E 156 * 006 C □ L @ 9 ^ ++	E	15	6	3	1	10	12	8	10	12	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19D^226^@E+□	TAZ E 226 * 006 C □ # @ 0 ^ ++	TAZ E 226 * 006 C □ L @ 9 ^ ++	E	22	6	3.5	2	20	24	8	10	12	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR19D^336^@E+□	TAZ E 336 * 006 C □ # @ 0 ^ ++	TAZ E 336 * 006 C □ L @ 9 ^ ++	E	33	6	3.5	2	20	24	6	8	8	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR19D^476^@F+□	TAZ F 476 * 006 C □ # @ 0 ^ ++	TAZ F 476 * 006 C □ L @ 9 ^ ++	F	47	6	3.5	3	30	36	8	10	12	0.100	0.17	0.15	0.07	0.59	0.53	0.24
CWR19D^686^@F+□	TAZ F 686 * 006 C □ # @ 0 ^ ++	TAZ F 686 * 006 C □ L @ 9 ^ ++	F	68	6	1.5	4	40	48	8	10	12	0.100	0.26	0.23	0.10	0.39	0.35	0.15
CWR19D^686^@G+□	TAZ G 686 * 006 C □ # @ 0 ^ ++	TAZ G 686 * 006 C □ L @ 9 ^ ++	G	68	6	1	4	40	48	10	12	12	0.125	0.35	0.32	0.14	0.35	0.32	0.14
CWR19D^107^@G+□	TAZ G 107 * 006 C □ # @ 0 ^ ++	TAZ G 107 * 006 C □ L @ 9 ^ ++	G	100	6	1.1	6	60	72	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19D^157^@G+□	TAZ G 157 * 006 C □ # @ 0 ^ ++	TAZ G 157 * 006 C □ L @ 9 ^ ++	G	150	6	1.1	10	100	120	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19D^227^@H+□	TAZ H 227 * 006 C □ # @ 0 ^ ++	TAZ H 227 * 006 C □ L @ 9 ^ ++	H	220	6	0.9	10	100	120	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19D^337^@H+□	TAZ H 337 * 006 C □ # @ 0 ^ ++	TAZ H 337 * 006 C □ L @ 9 ^ ++	H	330	6	0.9	20	200	240	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19F^225^@A+□	TAZ A 225 * 010 C □ # @ 0 ^ ++	TAZ A 225 * 010 C □ L @ 9 ^ ++	A	2.2	10	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19F^335^@A+□	TAZ A 335 * 010 C □ # @ 0 ^ ++	TAZ A 335 * 010 C □ L @ 9 ^ ++	A	3.3	10	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31
CWR19F^475^@B+□	TAZ B 475 * 010 C □ # @ 0 ^ ++	TAZ B 475 * 010 C □ L @ 9 ^ ++	B	4.7	10	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19F^685^@B+□	TAZ B 685 * 010 C □ # @ 0 ^ ++	TAZ B 685 * 010 C □ L @ 9 ^ ++	B	6.8	10	8	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19F^106^@B+□	TAZ B 106 * 010 C □ # @ 0 ^ ++	TAZ B 106 * 010 C □ L @ 9 ^ ++	B	10	10	8	1	10	12	8	10	10	0.070	0.09	0.08	0.04	0.75	0.67	0.30
CWR19F^475^@C+□	TAZ C 475 * 010 C □ # @ 0 ^ ++	TAZ C 475 * 010 C □ L @ 9 ^ ++	C	4.7	10	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR19F^685^@C+□	TAZ C 685 * 010 C □ # @ 0 ^ ++	TAZ C 685 * 010 C □ L @ 9 ^ ++	C	6.8	10	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR19F^106^@C+□	TAZ C 106 * 010 C □ # @ 0 ^ ++	TAZ C 106 * 010 C □ L @ 9 ^ ++	C	10	10	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR19F^685^@D+□	TAZ D 685 * 010 C □ # @ 0 ^ ++	TAZ D 685 * 010 C □ L @ 9 ^ ++	D	6.8	10	5	1	10	12	6	8	8	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR19F^106^@D+□	TAZ D 106 * 010 C □ # @ 0 ^ ++	TAZ D 106 * 010 C □ L @ 9 ^ ++	D	10	10	4	1	10	12	6	8	8	0.080	0.14	0.13	0.06	0.57	0.51	0.23
CWR19F^156^@D+□	TAZ D 156 * 010 C □ # @ 0 ^ ++	TAZ D 156 * 010 C □ L @ 9 ^ ++	D	15	10	5	2	20	24	6	8	8	0.080	0.13	0.11	0.05	0.63	0.57	0.25
CWR19F^106^@E+□	TAZ E 106 * 010 C □ # @ 0 ^ ++	TAZ E 106 * 010 C □ L @ 9 ^ ++	E	10	10	3.5	1	10	12	6	8	8	0.090	0.16	0.14	0.06	0.56	0.51	0.22
CWR19F^156^@E+□	TAZ E 156 * 010 C □ # @ 0 ^ ++	TAZ E 156 * 010 C □ L @ 9 ^ ++	E	15	10	3	2	20	24	8	10	10	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19F^226^@E+□	TAZ E 226 * 010 C □ # @ 0 ^ ++	TAZ E 226 * 010 C □ L @ 9 ^ ++	E	22	10	2	3	30	36	8	10	10	0.090	0.21	0.19	0.08	0.42	0.38	0.17
CWR19F^336^@F+□	TAZ F 336 * 010 C □ # @ 0 ^ ++	TAZ F 336 * 010 C □ L @ 9 ^ ++	F	33	10	1.5	3	30	36	8	10	10	0.100	0.26	0.23	0.10	0.39	0.35	0.15
CWR19F^476^@F+□	TAZ F 476 * 010 C □ # @ 0 ^ ++	TAZ F 476 * 010 C □ L @ 9 ^ ++	F	47	10	1.5	4	40	48	10	12	12	0.100	0.26	0.23	0.10	0.39	0.35	0.15
CWR19F^476^@G+□	TAZ G 476 * 010 C □ # @ 0 ^ ++	TAZ G 476 * 010 C □ L @ 9 ^ ++	G	47	10	1	4	40	48	10	12	12	0.125	0.35	0.32	0.14	0.35	0.32	0.14
CWR19F^686^@G+□	TAZ G 686 * 010 C □ # @ 0 ^ ++	TAZ G 686 * 010 C □ L @ 9 ^ ++	G	68	10	1.1	6	60	72	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19F^107^@G+□	TAZ G 107 * 010 C □ # @ 0 ^ ++	TAZ G 107 * 010 C □ L @ 9 ^ ++	G	100	10	1.1	10	100	120	10	12	12	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19F^107^@H+□	TAZ H 107 * 010 C □ # @ 0 ^ ++	TAZ H 107 * 010 C □ L @ 9 ^ ++	H	100	10	0.9	10	100	120	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19F^157^@H+□	TAZ H 157 * 010 C □ # @ 0 ^ ++	TAZ H 157 * 010 C □ L @ 9 ^ ++	H	150	10	0.9	15	150	180	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19F^227^@H+□	TAZ H 227 * 010 C □ # @ 0 ^ ++	TAZ H 227 * 010 C □ L @ 9 ^ ++	H	220	10	0.9	20	200	240	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19F^157^@X+□	TAZ X 157 * 010 C □ # @ 0 ^ ++	TAZ X 157 * 010 C □ L @ 9 ^ ++	X	150	10	0.9	15	150	180	10	12	12	0.200	0.47	0.42	0.19	0.42	0.38	0.17

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR19 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating per MIL-PRF-55365/11									Typical Ripple Data by Rating							
			Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
CWR19 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case	µF @ 25°C	V @ +85°C	Ohms @ +25°C	+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
CWR19H^105^@A+□	TAZ A 105 * 015 C □ # @ 0 ^ ++	TAZ A 105 * 015 C □ L @ 9 ^ ++	A	1	15	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19H^155^@A+□	TAZ A 155 * 015 C □ # @ 0 ^ ++	TAZ A 155 * 015 C □ L @ 9 ^ ++	A	1.5	15	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19H^225^@A+□	TAZ A 225 * 015 C □ # @ 0 ^ ++	TAZ A 225 * 015 C □ L @ 9 ^ ++	A	2.2	15	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19H^335^@B+□	TAZ B 335 * 015 C □ # @ 0 ^ ++	TAZ B 335 * 015 C □ L @ 9 ^ ++	B	3.3	15	9	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.79	0.71	0.32
CWR19H^475^@B+□	TAZ B 475 * 015 C □ # @ 0 ^ ++	TAZ B 475 * 015 C □ L @ 9 ^ ++	B	4.7	15	5	1	10	12	6	8	8	0.070	0.12	0.11	0.05	0.69	0.53	0.24
CWR19H^475^@C+□	TAZ C 475 * 015 C □ # @ 0 ^ ++	TAZ C 475 * 015 C □ L @ 9 ^ ++	C	4.7	15	5.5	1	10	12	6	8	8	0.075	0.12	0.11	0.05	0.64	0.58	0.26
CWR19H^475^@D+□	TAZ D 475 * 015 C □ # @ 0 ^ ++	TAZ D 475 * 015 C □ L @ 9 ^ ++	D	4.7	15	6	1	10	12	6	8	8	0.080	0.12	0.10	0.05	0.69	0.62	0.28
CWR19H^685^@D+□	TAZ D 685 * 015 C □ # @ 0 ^ ++	TAZ D 685 * 015 C □ L @ 9 ^ ++	D	6.8	15	6	1	10	12	6	8	8	0.080	0.12	0.10	0.05	0.69	0.62	0.28
CWR19H^106^@D+□	TAZ D 106 * 015 C □ # @ 0 ^ ++	TAZ D 106 * 015 C □ L @ 9 ^ ++	D	10	15	6	2	20	24	6	8	8	0.080	0.12	0.10	0.05	0.69	0.62	0.28
CWR19H^685^@E+□	TAZ E 685 * 015 C □ # @ 0 ^ ++	TAZ E 685 * 015 C □ L @ 9 ^ ++	E	6.8	15	3	1	10	12	8	10	12	0.090	0.17	0.16	0.07	0.52	0.47	0.21
CWR19H^106^@E+□	TAZ E 106 * 015 C □ # @ 0 ^ ++	TAZ E 106 * 015 C □ L @ 9 ^ ++	E	10	15	4	2	20	24	6	8	8	0.090	0.15	0.14	0.06	0.60	0.54	0.24
CWR19H^156^@E+□	TAZ E 156 * 015 C □ # @ 0 ^ ++	TAZ E 156 * 015 C □ L @ 9 ^ ++	E	15	15	4	2	20	24	6	8	8	0.090	0.15	0.14	0.06	0.60	0.54	0.24
CWR19H^156^@F+□	TAZ F 156 * 015 C □ # @ 0 ^ ++	TAZ F 156 * 015 C □ L @ 9 ^ ++	F	15	15	3	2	20	24	8	10	10	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19H^226^@F+□	TAZ F 226 * 015 C □ # @ 0 ^ ++	TAZ F 226 * 015 C □ L @ 9 ^ ++	F	22	15	3	3	30	36	8	10	10	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19H^336^@F+□	TAZ F 336 * 015 C □ # @ 0 ^ ++	TAZ F 336 * 015 C □ L @ 9 ^ ++	F	33	15	3	5	50	60	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19H^336^@G+□	TAZ G 336 * 015 C □ # @ 0 ^ ++	TAZ G 336 * 015 C □ L @ 9 ^ ++	G	33	15	1.1	6	60	72	8	10	10	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19H^476^@G+□	TAZ G 476 * 015 C □ # @ 0 ^ ++	TAZ G 476 * 015 C □ L @ 9 ^ ++	G	47	15	1.1	10	100	120	8	10	10	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19H^686^@G+□	TAZ G 686 * 015 C □ # @ 0 ^ ++	TAZ G 686 * 015 C □ L @ 9 ^ ++	G	68	15	1.1	10	100	120	8	10	10	0.125	0.34	0.30	0.13	0.37	0.33	0.15
CWR19H^476^@H+□	TAZ H 476 * 015 C □ # @ 0 ^ ++	TAZ H 476 * 015 C □ L @ 9 ^ ++	H	47	15	0.9	10	100	120	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19H^686^@H+□	TAZ H 686 * 015 C □ # @ 0 ^ ++	TAZ H 686 * 015 C □ L @ 9 ^ ++	H	68	15	0.9	10	100	120	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19H^107^@H+□	TAZ H 107 * 015 C □ # @ 0 ^ ++	TAZ H 107 * 015 C □ L @ 9 ^ ++	H	100	15	0.9	15	150	180	10	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19J^684^@A+□	TAZ A 684 * 020 C □ # @ 0 ^ ++	TAZ A 684 * 020 C □ L @ 9 ^ ++	A	0.68	20	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19J^105^@A+□	TAZ A 105 * 020 C □ # @ 0 ^ ++	TAZ A 105 * 020 C □ L @ 9 ^ ++	A	1	20	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19J^155^@B+□	TAZ B 155 * 020 C □ # @ 0 ^ ++	TAZ B 155 * 020 C □ L @ 9 ^ ++	B	1.5	20	9	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.79	0.71	0.32
CWR19J^225^@B+□	TAZ B 225 * 020 C □ # @ 0 ^ ++	TAZ B 225 * 020 C □ L @ 9 ^ ++	B	2.2	20	9	1	10	12	6	8	8	0.070	0.09	0.08	0.04	0.79	0.71	0.32
CWR19J^335^@D+□	TAZ D 335 * 020 C □ # @ 0 ^ ++	TAZ D 335 * 020 C □ L @ 9 ^ ++	D	3.3	20	6	1	10	12	6	8	8	0.080	0.12	0.10	0.05	0.69	0.62	0.28
CWR19J^475^@E+□	TAZ E 475 * 020 C □ # @ 0 ^ ++	TAZ E 475 * 020 C □ L @ 9 ^ ++	E	4.7	20	6	1	10	12	6	8	8	0.090	0.12	0.11	0.05	0.73	0.66	0.29
CWR19J^685^@E+□	TAZ E 685 * 020 C □ # @ 0 ^ ++	TAZ E 685 * 020 C □ L @ 9 ^ ++	E	6.8	20	5	2	20	24	6	8	8	0.090	0.13	0.12	0.05	0.67	0.60	0.27
CWR19J^106^@E+□	TAZ E 106 * 020 C □ # @ 0 ^ ++	TAZ E 106 * 020 C □ L @ 9 ^ ++	E	10	20	5	2	20	24	6	8	8	0.090	0.13	0.12	0.05	0.67	0.60	0.27
CWR19J^106^@F+□	TAZ F 106 * 020 C □ # @ 0 ^ ++	TAZ F 106 * 020 C □ L @ 9 ^ ++	F	10	20	3	2	20	24	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19J^156^@F+□	TAZ F 156 * 020 C □ # @ 0 ^ ++	TAZ F 156 * 020 C □ L @ 9 ^ ++	F	15	20	3	3	30	36	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19J^226^@G+□	TAZ G 226 * 020 C □ # @ 0 ^ ++	TAZ G 226 * 020 C □ L @ 9 ^ ++	G	22	20	2.5	4	40	48	6	8	8	0.125	0.22	0.20	0.09	0.56	0.50	0.22
CWR19J^336^@H+□	TAZ H 336 * 020 C □ # @ 0 ^ ++	TAZ H 336 * 020 C □ L @ 9 ^ ++	H	33	20	0.9	6	60	72	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19J^476^@H+□	TAZ H 476 * 020 C □ # @ 0 ^ ++	TAZ H 476 * 020 C □ L @ 9 ^ ++	H	47	20	0.9	10	100	120	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19J^476^@X+□	TAZ X 476 * 020 C □ # @ 0 ^ ++	TAZ X 476 * 020 C □ L @ 9 ^ ++	X	47	20	0.9	10	100	120	8	10	10	0.200	0.47	0.42	0.19	0.42	0.38	0.17
CWR19K^474^@A+□	TAZ A 474 * 025 C □ # @ 0 ^ ++	TAZ A 474 * 025 C □ L @ 9 ^ ++	A	0.47	25	15	1	10	12	6	8	8	0.050	0.06	0.05	0.02	0.87	0.78	0.35
CWR19K^105^@B+□	TAZ B 105 * 025 C □ # @ 0 ^ ++	TAZ B 105 * 025 C □ L @ 9 ^ ++	B	1	25	10	1	10	12	6	8	8	0.070	0.08	0.08	0.03	0.84	0.75	0.33
CWR19K^225^@D+□	TAZ D 225 * 025 C □ # @ 0 ^ ++	TAZ D 225 * 025 C □ L @ 9 ^ ++	D	2.2	25	6	1	10	12	6	8	8	0.080	0.12	0.10	0.05	0.69	0.62	0.28
CWR19K^335^@E+□	TAZ E 335 * 025 C □ # @ 0 ^ ++	TAZ E 335 * 025 C □ L @ 9 ^ ++	E	3.3	25	4	1	10	12	6	8	8	0.090	0.15	0.14	0.06	0.60	0.54	0.24
CWR19K^685^@F+□	TAZ F 685 * 025 C □ # @ 0 ^ ++	TAZ F 685 * 025 C □ L @ 9 ^ ++	F	6.8	25	3	2	20	24	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22
CWR19K^156^@G+□	TAZ G 156 * 025 C □ # @ 0 ^ ++	TAZ G 156 * 025 C □ L @ 9 ^ ++	G	15	25	1.4	4	40	48	6	8	8	0.125	0.30	0.27	0.12	0.42	0.38	0.17
CWR19K^226^@G+□	TAZ G 226 * 025 C □ # @ 0 ^ ++	TAZ G 226 * 025 C □ L @ 9 ^ ++	G	22	25	1.4	6	60	72	6	8	8	0.125	0.30	0.27	0.12	0.42	0.38	0.17
CWR19K^226^@H+□	TAZ H 226 * 025 C □ # @ 0 ^ ++	TAZ H 226 * 025 C □ L @ 9 ^ ++	H	22	25	0.9	6	60	72	6	8	8	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19K^336^@H+□	TAZ H 336 * 025 C □ # @ 0 ^ ++	TAZ H 336 * 025 C □ L @ 9 ^ ++	H	33	25	0.9	10	100	120	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR19M^334^@A+□	TAZ A 334 * 035 C □ # @ 0 ^ ++	TAZ A 334 * 035 C □ L @ 9 ^ ++	A	0.33	35	22	1	10	12	6	8	8	0.050	0.05	0.04	0.02	1.05	0.94	0.42
CWR19M^685^@G+□	TAZ G 685 * 035 C □ # @ 0 ^ ++	TAZ G 685 * 035 C □ L @ 9 ^ ++	G	6.8	35	1.5	3	30	36	6	8	8	0.125	0.29	0.26	0.12	0.43	0.39	0.17
CWR19M^106^@H+□	TAZ H 106 * 035 C □ # @ 0 ^ ++	TAZ H 106 * 035 C □ L @ 9 ^ ++	H	10	35	0.9	4	40	48	8	10	10	0.150	0.41	0.37	0.16	0.37	0.33	0.15

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

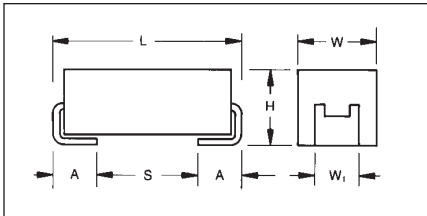
NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR29 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level



MARKING

(White marking on black body)



Polarity Stripe (+)

**Capacitance Code
Rated Voltage**

A low ESR version of CWR09 and CWR19 that is fully qualified to MIL-PRF-55365/11, the CWR29 series represents the most flexible of surface mount form factors and the optimum power handling for all filtering applications. It is offered in nine case sizes (the original A through H of CWR09 and adding the new X case size).

The molded body / compliant termination construction ensures no TCE mismatch with any substrate. This construction is compatible with a wide range of SMT board assembly processes including wave or reflow solder, conductive epoxy or compression bonding techniques. The parts also carry full polarity and capacitance / voltage marking.

The five smaller cases are characterized by their low profile construction, with the

A case being the world's smallest molded military tantalum chip.

The series is qualified to MIL-PRF-55365 Weibull "B", "C", "D" and "T" levels, with all surge options ("A", "B" & "C") available.

For Space Level applications, AVX SRC 9000 qualification is recommended (see ratings table for part number availability).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these are "H", "K", "C" and "B" termination, respectively, per MIL-PRF-55365). In addition, the molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and out-gassing requirements of NASA SP-R-0022A.

CASE DIMENSIONS:

millimeters (inches)

Case Code	Length (L) ±0.38 (0.015)	Width (W) ±0.38 (0.015)	Height (H) ±0.38 (0.015)	Term. Width (W _t)	Term. Length (A) ±0.13 (0.005)	S min	Typical Weight (g)
A	2.54 (0.100)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	0.38 (0.015)	0.016
B	3.81 (0.150)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	1.65 (0.065)	0.025
C	5.08 (0.200)	1.27 (0.050)	1.27 (0.050)	1.27±0.13 (0.050±0.005)	0.76 (0.030)	2.92 (0.115)	0.035
D	3.81 (0.150)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	1.65 (0.065)	0.045
E	5.08 (0.200)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	2.92 (0.115)	0.065
F	5.59 (0.220)	3.43 (0.135)	1.78 (0.070)	3.30±0.13 (0.130±0.005)	0.76 (0.030)	3.43 (0.135)	0.125
G	6.73 (0.265)	2.79 (0.110)	2.79 (0.110)	2.67±0.13 (0.105±0.005)	1.27 (0.050)	3.56 (0.140)	0.205
H	7.24 (0.285)	3.81 (0.150)	2.79 (0.110)	3.68+0.13/-0.51 (0.145+0.005/-0.020)	1.27 (0.050)	4.06 (0.160)	0.035
X	6.93 Max (0.273)	5.41 Max (0.213)	2.74 Max (0.108)	3.05±0.13 (0.120±0.005)	1.19 (0.047)	N/A	0.420

CWR29-MIL-PRF 55365/11

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage DC (V _R) at 85°C							
µF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)	25V (K)	35V (M)	50V (N)
0.10	104								A
0.15	154								A
0.22	224							A	B
0.33	334						A	A	B
0.47	474				A	A	A	B	C
0.68	684					A/B	B	C	D
1.0	105			A	A	A/B	B/C	D	E
1.5	155		A		A/B	B/C	D	E	F
2.2	225	A		A/B	A/C	B/D	D/E		F
3.3	335	A	A/B	A/C	B/D	D/E	E	F	G
4.7	475	A/B	A/C	B/C/D	B/C/D/E	E	F	G	H
6.8	685	A/C	B/D	B/C/D/E	D/E	E/F	F/G	G/H	
10	106	B/D	B/E	B/C/D/E	D/E/F	E/F	G	H	
15	156	B/E	B/D/E	D/E/F	E/F	F/G	G/H		
22	226	B/D	D/E/F	E	F/G	G/H	G/H		
33	336	D/E/F	E	F/G	F/G/H	H	H		
47	476	E	F/G	F/G/H	G/H	H/X			
68	686	E/G	F/G/H	G	G/H				
100	107	F/H	G	G/H	H				
150	157	G	G	H/X					
220	227	H	H	H					
330	337	H	H						



HOW TO ORDER

COTS-PLUS & MIL QPL (CWR29):

TAZ	H	227	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A M = MIL (JAN) CWR29	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

CWR29 P/N CROSS REFERENCE:

CWR29	D	^	227	*	@	H	+	□
Type	Voltage Code C = 4Vdc D = 6Vdc F = 10Vdc H = 15Vdc J = 20Vdc K = 25Vdc M = 35Vdc N = 50Vdc	Termination Finish H = Solder Plated K = Solder Fused C = Hot Solder Dipped B = Gold Plated	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level A = Non-ER	Case Size	Surge Test Option A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C C = 10 cycles, -55°C & +85°C before Weibull Z = None required	Packaging Bulk = Standard TR7 = 7" T&R TR13 = 13" T&R W = Waffle See page 5 for additional packaging options.

SPACE LEVEL OPTIONS TO SRC9000*:

TAZ	H	227	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	0.1 μF to 330 μF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage: (V _R)	≤85°C:	4	6	10	15	20	25	35	50	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	32	46	65	
	125°C:	3.4	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C									

TAZ Series



CWR29 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/11									Typical Ripple Data by Rating						
				Cap @ 120Hz µF	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
CWR29 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case				+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
CWR29C^225^@A+□	TAZ A 225 * 004 L □ # @ 0 ^ + +	TAZ A 225 * 004 L □ L @ 9 ^ + +	A	2.2	4	4	1	10	12	6	8	8	0.050	0.11	0.10	0.04	0.45	0.40	0.18
CWR29C^335^@A+□	TAZ A 335 * 004 L □ # @ 0 ^ + +	TAZ A 335 * 004 L □ L @ 9 ^ + +	A	3.3	4	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29C^475^@A+□	TAZ A 475 * 004 L □ # @ 0 ^ + +	TAZ A 475 * 004 L □ L @ 9 ^ + +	A	4.7	4	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29C^475^@B+□	TAZ B 475 * 004 L □ # @ 0 ^ + +	TAZ B 475 * 004 L □ L @ 9 ^ + +	B	4.7	4	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29C^685^@A+□	TAZ A 685 * 004 L □ # @ 0 ^ + +	TAZ A 685 * 004 L □ L @ 9 ^ + +	A	6.8	4	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29C^685^@C+□	TAZ C 685 * 004 L □ # @ 0 ^ + +	TAZ C 685 * 004 L □ L @ 9 ^ + +	C	6.8	4	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29C^106^@B+□	TAZ B 106 * 004 L □ # @ 0 ^ + +	TAZ B 106 * 004 L □ L @ 9 ^ + +	B	10	4	3.2	1	10	12	8	10	10	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29C^106^@D+□	TAZ D 106 * 004 L □ # @ 0 ^ + +	TAZ D 106 * 004 L □ L @ 9 ^ + +	D	10	4	1.3	1	10	12	8	8	10	0.080	0.25	0.22	0.10	0.32	0.29	0.13
CWR29C^156^@B+□	TAZ B 156 * 004 L □ # @ 0 ^ + +	TAZ B 156 * 004 L □ L @ 9 ^ + +	B	15	4	3.2	1	10	12	8	10	10	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29C^156^@E+□	TAZ E 156 * 004 L □ # @ 0 ^ + +	TAZ E 156 * 004 L □ L @ 9 ^ + +	E	15	4	1	1	10	12	8	10	12	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29C^226^@B+□	TAZ B 226 * 004 L □ # @ 0 ^ + +	TAZ B 226 * 004 L □ L @ 9 ^ + +	B	22	4	3.2	1	10	12	8	10	10	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29C^226^@D+□	TAZ D 226 * 004 L □ # @ 0 ^ + +	TAZ D 226 * 004 L □ L @ 9 ^ + +	D	22	4	1.3	1	10	12	8	10	12	0.080	0.25	0.22	0.10	0.32	0.29	0.13
CWR29C^336^@D+□	TAZ D 336 * 004 L □ # @ 0 ^ + +	TAZ D 336 * 004 L □ L @ 9 ^ + +	D	33	4	1.3	2	20	24	8	10	12	0.080	0.25	0.22	0.10	0.32	0.29	0.13
CWR29C^336^@E+□	TAZ E 336 * 004 L □ # @ 0 ^ + +	TAZ E 336 * 004 L □ L @ 9 ^ + +	E	33	4	0.9	2	20	24	8	10	12	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29C^336^@F+□	TAZ F 336 * 004 L □ # @ 0 ^ + +	TAZ F 336 * 004 L □ L @ 9 ^ + +	F	33	4	0.6	2	20	24	8	10	12	0.100	0.41	0.37	0.16	0.24	0.22	0.10
CWR29C^476^@E+□	TAZ E 476 * 004 L □ # @ 0 ^ + +	TAZ E 476 * 004 L □ L @ 9 ^ + +	E	47	4	0.9	2	20	24	8	10	12	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29C^686^@E+□	TAZ E 686 * 004 L □ # @ 0 ^ + +	TAZ E 686 * 004 L □ L @ 9 ^ + +	E	68	4	0.9	3	30	36	8	10	12	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29C^686^@G+□	TAZ G 686 * 004 L □ # @ 0 ^ + +	TAZ G 686 * 004 L □ L @ 9 ^ + +	G	68	4	0.275	3	30	36	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29C^107^@F+□	TAZ F 107 * 004 L □ # @ 0 ^ + +	TAZ F 107 * 004 L □ L @ 9 ^ + +	F	100	4	0.55	4	40	48	10	12	12	0.100	0.43	0.38	0.17	0.23	0.21	0.09
CWR29C^107^@H+□	TAZ H 107 * 004 L □ # @ 0 ^ + +	TAZ H 107 * 004 L □ L @ 9 ^ + +	H	100	4	0.18	4	40	48	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29C^157^@G+□	TAZ G 157 * 004 L □ # @ 0 ^ + +	TAZ G 157 * 004 L □ L @ 9 ^ + +	G	150	4	0.25	6	60	72	10	12	12	0.125	0.71	0.64	0.28	0.18	0.16	0.07
CWR29C^227^@H+□	TAZ H 227 * 004 L □ # @ 0 ^ + +	TAZ H 227 * 004 L □ L @ 9 ^ + +	H	220	4	0.2	8	80	96	10	12	12	0.150	0.87	0.78	0.35	0.17	0.16	0.07
CWR29C^337^@H+□	TAZ H 337 * 004 L □ # @ 0 ^ + +	TAZ H 337 * 004 L □ L @ 9 ^ + +	H	330	4	0.18	10	100	120	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29D^155^@A+□	TAZ A 155 * 006 L □ # @ 0 ^ + +	TAZ A 155 * 006 L □ L @ 9 ^ + +	A	1.5	6	4	1	10	12	6	8	8	0.050	0.11	0.10	0.04	0.45	0.40	0.18
CWR29D^335^@A+□	TAZ A 335 * 006 L □ # @ 0 ^ + +	TAZ A 335 * 006 L □ L @ 9 ^ + +	A	3.3	6	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29D^335^@B+□	TAZ B 335 * 006 L □ # @ 0 ^ + +	TAZ B 335 * 006 L □ L @ 9 ^ + +	B	3.3	6	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29D^475^@A+□	TAZ A 475 * 006 L □ # @ 0 ^ + +	TAZ A 475 * 006 L □ L @ 9 ^ + +	A	4.7	6	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29D^475^@C+□	TAZ C 475 * 006 L □ # @ 0 ^ + +	TAZ C 475 * 006 L □ L @ 9 ^ + +	C	4.7	6	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29D^685^@B+□	TAZ B 685 * 006 L □ # @ 0 ^ + +	TAZ B 685 * 006 L □ L @ 9 ^ + +	B	6.8	6	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29D^685^@D+□	TAZ D 685 * 006 L □ # @ 0 ^ + +	TAZ D 685 * 006 L □ L @ 9 ^ + +	D	6.8	6	1.5	1	10	12	6	8	8	0.080	0.23	0.21	0.09	0.35	0.31	0.14
CWR29D^106^@B+□	TAZ B 106 * 006 L □ # @ 0 ^ + +	TAZ B 106 * 006 L □ L @ 9 ^ + +	B	10	6	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29D^106^@E+□	TAZ E 106 * 006 L □ # @ 0 ^ + +	TAZ E 106 * 006 L □ L @ 9 ^ + +	E	10	6	1	1	10	12	8	10	12	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29D^156^@B+□	TAZ B 156 * 006 L □ # @ 0 ^ + +	TAZ B 156 * 006 L □ L @ 9 ^ + +	B	15	6	3.2	1	10	12	8	10	10	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29D^156^@D+□	TAZ D 156 * 006 L □ # @ 0 ^ + +	TAZ D 156 * 006 L □ L @ 9 ^ + +	D	15	6	1.7	1	10	12	8	10	12	0.080	0.22	0.20	0.09	0.37	0.33	0.15
CWR29D^156^@E+□	TAZ E 156 * 006 L □ # @ 0 ^ + +	TAZ E 156 * 006 L □ L @ 9 ^ + +	E	15	6	0.9	1	10	12	8	10	12	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29D^226^@D+□	TAZ D 226 * 006 L □ # @ 0 ^ + +	TAZ D 226 * 006 L □ L @ 9 ^ + +	D	22	6	1.7	1	10	12	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15
CWR29D^226^@E+□	TAZ E 226 * 006 L □ # @ 0 ^ + +	TAZ E 226 * 006 L □ L @ 9 ^ + +	E	22	6	1	2	20	24	8	10	12	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29D^226^@F+□	TAZ F 226 * 006 L □ # @ 0 ^ + +	TAZ F 226 * 006 L □ L @ 9 ^ + +	F	22	6	0.6	2	20	24	8	10	12	0.100	0.41	0.37	0.16	0.24	0.22	0.10
CWR29D^336^@E+□	TAZ E 336 * 006 L □ # @ 0 ^ + +	TAZ E 336 * 006 L □ L @ 9 ^ + +	E	33	6	1	2	20	24	6	8	8	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29D^476^@F+□	TAZ F 476 * 006 L □ # @ 0 ^ + +	TAZ F 476 * 006 L □ L @ 9 ^ + +	F	47	6	1	3	30	36	8	10	12	0.100	0.32	0.28	0.13	0.32	0.28	0.13
CWR29D^476^@G+□	TAZ G 476 * 006 L □ # @ 0 ^ + +	TAZ G 476 * 006 L □ L @ 9 ^ + +	G	47	6	0.275	3	30	36	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29D^686^@F+□	TAZ F 686 * 006 L □ # @ 0 ^ + +	TAZ F 686 * 006 L □ L @ 9 ^ + +	F	68	6	0.4	4	40	48	10	12	12	0.100	0.50	0.45	0.20	0.20	0.18	0.08
CWR29D^686^@G+□	TAZ G 686 * 006 L □ # @ 0 ^ + +	TAZ G 686 * 006 L □ L @ 9 ^ + +	G	68	6	0.25	4	40	48	10	12	12	0.125	0.71	0.64	0.28	0.18	0.16	0.07
CWR29D^686^@H+□	TAZ H 686 * 006 L □ # @ 0 ^ + +	TAZ H 686 * 006 L □ L @ 9 ^ + +	H	68	6	0.18	4	40	48	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29D^107^@G+□	TAZ G 107 * 006 L □ # @ 0 ^ + +	TAZ G 107 * 006 L □ L @ 9 ^ + +	G	100	6	0.275	6	60	72	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29D^157^@G+□	TAZ G 157 * 006 L □ # @ 0 ^ + +	TAZ G 157 * 006 L □ L @ 9 ^ + +	G	150	6	0.275	10	100	120	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29D^227^@H+□	TAZ H 227 * 006 L □ # @ 0 ^ + +	TAZ H 227 * 006 L □ L @ 9 ^ + +	H	220	6	0.18	10	100	120	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29D^337^@H+□	TAZ H 337 * 006 L □ # @ 0 ^ + +	TAZ H 337 * 006 L □ L @ 9 ^ + +	H	330	6	0.18	20	200	240	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29F^105^@A+□	TAZ A 105 * 010 L □ # @ 0 ^ + +	TAZ A 105 * 010 L □ L @ 9 ^ + +	A	1	10	5	1	10	12	6	8	8	0.050	0.10	0.09	0.04	0.50	0.45	0.20
CWR29F^225^@A+□	TAZ A 225 * 010 L □ # @ 0 ^ + +	TAZ A 225 * 010 L □ L @ 9 ^ + +	A	2.2	10	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29F^225^@B+□	TAZ B 225 * 010 L □ # @ 0 ^ + +	TAZ B 225 * 010 L □ L @ 9 ^ + +	B	2.2	10	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29F^335^@A+□	TAZ A 335 * 010 L □ # @ 0 ^ + +	TAZ A 335 * 010 L □ L @ 9 ^ + +	A	3.3	10	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29F^335^@C+□	TAZ C 335 * 010 L □ # @ 0 ^ + +	TAZ C 335 * 010 L □ L @ 9 ^ + +	C	3.3	10	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29F^475^@B+□	TAZ B 475 * 010 L □ # @ 0 ^ + +	TAZ B 475 * 010 L □ L @ 9 ^ + +	B	4.7	10	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29F^475^@C+□	TAZ C 475 * 010 L □ # @ 0 ^ + +	TAZ C 475 * 010 L □ L @ 9 ^ + +	C	4.7	10	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR29 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/11									Typical Ripple Data by Rating						
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
CWR29 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case																
CWR29F^475^@D+□	TAZ D 475 * 010 L □ # @ 0^+ ++	TAZ D 475 * 010 LL @ 9^+ ++	D	4.7	10	1.5	1	10	12	6	8	8	0.080	0.23	0.21	0.09	0.35	0.31	0.14
CWR29F^685^@B+□	TAZ B 685 * 010 L □ # @ 0^+ ++	TAZ B 685 * 010 LL @ 9^+ ++	B	6.8	10	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29F^685^@C+□	TAZ C 685 * 010 L □ # @ 0^+ ++	TAZ C 685 * 010 LL @ 9^+ ++	C	6.8	10	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29F^685^@D+□	TAZ D 685 * 010 L □ # @ 0^+ ++	TAZ D 685 * 010 LL @ 9^+ ++	D	6.8	10	1.7	1	10	12	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15
CWR29F^685^@E+□	TAZ E 685 * 010 L □ # @ 0^+ ++	TAZ E 685 * 010 LL @ 9^+ ++	E	6.8	10	1	1	10	12	6	8	8	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29F^106^@B+□	TAZ B 106 * 010 L □ # @ 0^+ ++	TAZ B 106 * 010 LL @ 9^+ ++	B	10	10	3.2	1	10	12	8	10	10	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29F^106^@C+□	TAZ C 106 * 010 L □ # @ 0^+ ++	TAZ C 106 * 010 LL @ 9^+ ++	C	10	10	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29F^106^@D+□	TAZ D 106 * 010 L □ # @ 0^+ ++	TAZ D 106 * 010 LL @ 9^+ ++	D	10	10	1.3	1	10	12	6	8	8	0.080	0.25	0.22	0.10	0.32	0.29	0.13
CWR29F^106^@E+□	TAZ E 106 * 010 L □ # @ 0^+ ++	TAZ E 106 * 010 LL @ 9^+ ++	E	10	10	1	1	10	12	6	8	8	0.090	0.30	0.27	0.12	0.30	0.27	0.12
CWR29F^156^@D+□	TAZ D 156 * 010 L □ # @ 0^+ ++	TAZ D 156 * 010 LL @ 9^+ ++	D	15	10	1.7	2	20	24	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15
CWR29F^156^@E+□	TAZ E 156 * 010 L □ # @ 0^+ ++	TAZ E 156 * 010 LL @ 9^+ ++	E	15	10	0.9	2	20	24	8	10	10	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29F^156^@F+□	TAZ F 156 * 010 L □ # @ 0^+ ++	TAZ F 156 * 010 LL @ 9^+ ++	F	15	10	0.7	2	20	24	8	8	10	0.100	0.38	0.34	0.15	0.26	0.24	0.11
CWR29F^226^@E+□	TAZ E 226 * 010 L □ # @ 0^+ ++	TAZ E 226 * 010 LL @ 9^+ ++	E	22	10	0.6	3	30	36	8	10	10	0.090	0.39	0.35	0.15	0.23	0.21	0.09
CWR29F^336^@F+□	TAZ F 336 * 010 L □ # @ 0^+ ++	TAZ F 336 * 010 LL @ 9^+ ++	F	33	10	0.4	3	30	36	8	10	10	0.100	0.50	0.45	0.20	0.20	0.18	0.08
CWR29F^336^@G+□	TAZ G 336 * 010 L □ # @ 0^+ ++	TAZ G 336 * 010 LL @ 9^+ ++	G	33	10	0.275	3	30	36	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29F^476^@F+□	TAZ F 476 * 010 L □ # @ 0^+ ++	TAZ F 476 * 010 LL @ 9^+ ++	F	47	10	0.4	4	40	48	10	12	12	0.100	0.50	0.45	0.20	0.20	0.18	0.08
CWR29F^476^@G+□	TAZ G 476 * 010 L □ # @ 0^+ ++	TAZ G 476 * 010 LL @ 9^+ ++	G	47	10	0.25	4	40	48	10	12	12	0.125	0.71	0.64	0.28	0.18	0.16	0.07
CWR29F^476^@H+□	TAZ H 476 * 010 L □ # @ 0^+ ++	TAZ H 476 * 010 LL @ 9^+ ++	H	47	10	0.18	5	50	60	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29F^686^@G+□	TAZ G 686 * 010 L □ # @ 0^+ ++	TAZ G 686 * 010 LL @ 9^+ ++	G	68	10	0.275	6	60	72	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29F^107^@G+□	TAZ G 107 * 010 L □ # @ 0^+ ++	TAZ G 107 * 010 LL @ 9^+ ++	G	100	10	0.275	10	100	120	10	12	12	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29F^107^@H+□	TAZ H 107 * 010 L □ # @ 0^+ ++	TAZ H 107 * 010 LL @ 9^+ ++	H	100	10	0.18	10	100	120	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29F^157^@H+□	TAZ H 157 * 010 L □ # @ 0^+ ++	TAZ H 157 * 010 LL @ 9^+ ++	H	150	10	0.18	15	150	180	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29F^157^@X+□	TAZ X 157 * 010 L □ # @ 0^+ ++	TAZ X 157 * 010 LL @ 9^+ ++	X	150	10	0.065	15	150	180	10	12	12	0.200	1.75	1.58	0.70	0.11	0.10	0.05
CWR29F^227^@H+□	TAZ H 227 * 010 L □ # @ 0^+ ++	TAZ H 227 * 010 LL @ 9^+ ++	H	220	10	0.18	20	200	240	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29H^684^@A+□	TAZ A 684 * 015 L □ # @ 0^+ ++	TAZ A 684 * 015 LL @ 9^+ ++	A	0.68	15	6	1	10	12	6	8	8	0.050	0.09	0.08	0.04	0.55	0.49	0.22
CWR29H^105^@A+□	TAZ A 105 * 015 L □ # @ 0^+ ++	TAZ A 105 * 015 LL @ 9^+ ++	A	1	15	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24
CWR29H^155^@A+□	TAZ A 155 * 015 L □ # @ 0^+ ++	TAZ A 155 * 015 LL @ 9^+ ++	A	1.5	15	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24
CWR29H^155^@B+□	TAZ B 155 * 015 L □ # @ 0^+ ++	TAZ B 155 * 015 LL @ 9^+ ++	B	1.5	15	3.2	1	10	12	6	8	8	0.070	0.15	0.13	0.06	0.47	0.43	0.19
CWR29H^225^@A+□	TAZ A 225 * 015 L □ # @ 0^+ ++	TAZ A 225 * 015 LL @ 9^+ ++	A	2.2	15	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24
CWR29H^225^@C+□	TAZ C 225 * 015 L □ # @ 0^+ ++	TAZ C 225 * 015 LL @ 9^+ ++	C	2.2	15	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29H^335^@B+□	TAZ B 335 * 015 L □ # @ 0^+ ++	TAZ B 335 * 015 LL @ 9^+ ++	B	3.3	15	3.6	1	10	12	6	8	8	0.070	0.14	0.13	0.06	0.50	0.45	0.20
CWR29H^335^@D+□	TAZ D 335 * 015 L □ # @ 0^+ ++	TAZ D 335 * 015 LL @ 9^+ ++	D	3.3	15	1.7	1	10	12	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15
CWR29H^475^@B+□	TAZ B 475 * 015 L □ # @ 0^+ ++	TAZ B 475 * 015 LL @ 9^+ ++	B	4.7	15	2	1	10	12	6	8	8	0.070	0.19	0.17	0.07	0.37	0.34	0.15
CWR29H^475^@C+□	TAZ C 475 * 015 L □ # @ 0^+ ++	TAZ C 475 * 015 LL @ 9^+ ++	C	4.7	15	2.2	1	10	12	6	8	8	0.075	0.18	0.17	0.07	0.41	0.37	0.16
CWR29H^475^@D+□	TAZ D 475 * 015 L □ # @ 0^+ ++	TAZ D 475 * 015 LL @ 9^+ ++	D	4.7	15	2	1	10	12	6	8	8	0.080	0.20	0.18	0.08	0.40	0.36	0.16
CWR29H^475^@E+□	TAZ E 475 * 015 L □ # @ 0^+ ++	TAZ E 475 * 015 LL @ 9^+ ++	E	4.7	15	1.2	1	10	12	6	8	8	0.090	0.27	0.25	0.11	0.33	0.30	0.13
CWR29H^685^@D+□	TAZ D 685 * 015 L □ # @ 0^+ ++	TAZ D 685 * 015 LL @ 9^+ ++	D	6.8	15	2	1	10	12	6	8	8	0.080	0.20	0.18	0.08	0.40	0.36	0.16
CWR29H^685^@E+□	TAZ E 685 * 015 L □ # @ 0^+ ++	TAZ E 685 * 015 LL @ 9^+ ++	E	6.8	15	0.9	1	10	12	8	10	12	0.090	0.32	0.28	0.13	0.28	0.26	0.11
CWR29H^106^@D+□	TAZ D 106 * 015 L □ # @ 0^+ ++	TAZ D 106 * 015 LL @ 9^+ ++	D	10	15	2	2	20	24	6	8	8	0.080	0.20	0.18	0.08	0.40	0.36	0.16
CWR29H^106^@E+□	TAZ E 106 * 015 L □ # @ 0^+ ++	TAZ E 106 * 015 LL @ 9^+ ++	E	10	15	1.2	2	20	24	6	8	8	0.090	0.27	0.25	0.11	0.33	0.30	0.13
CWR29H^106^@F+□	TAZ F 106 * 015 L □ # @ 0^+ ++	TAZ F 106 * 015 LL @ 9^+ ++	F	10	15	0.667	2	20	24	6	8	8	0.100	0.39	0.35	0.15	0.26	0.23	0.10
CWR29H^156^@E+□	TAZ E 156 * 015 L □ # @ 0^+ ++	TAZ E 156 * 015 LL @ 9^+ ++	E	15	15	1.2	2	20	24	6	8	8	0.090	0.27	0.25	0.11	0.33	0.30	0.13
CWR29H^156^@F+□	TAZ F 156 * 015 L □ # @ 0^+ ++	TAZ F 156 * 015 LL @ 9^+ ++	F	15	15	0.8	2	20	24	8	10	10	0.100	0.35	0.32	0.14	0.28	0.25	0.11
CWR29H^226^@F+□	TAZ F 226 * 015 L □ # @ 0^+ ++	TAZ F 226 * 015 LL @ 9^+ ++	F	22	15	0.8	3	30	36	8	10	10	0.100	0.35	0.32	0.14	0.28	0.25	0.11
CWR29H^226^@G+□	TAZ G 226 * 015 L □ # @ 0^+ ++	TAZ G 226 * 015 LL @ 9^+ ++	G	22	15	0.275	4	40	48	6	8	8	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29H^336^@F+□	TAZ F 336 * 015 L □ # @ 0^+ ++	TAZ F 336 * 015 LL @ 9^+ ++	F	33	15	0.8	5	50	60	6	8	8	0.100	0.35	0.32	0.14	0.28	0.25	0.11
CWR29H^336^@G+□	TAZ G 336 * 015 L □ # @ 0^+ ++	TAZ G 336 * 015 LL @ 9^+ ++	G	33	15	0.275	6	60	72	8	10	10	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29H^336^@H+□	TAZ H 336 * 015 L □ # @ 0^+ ++	TAZ H 336 * 015 LL @ 9^+ ++	H	33	15	0.18	5	50	60	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29H^476^@G+□	TAZ G 476 * 015 L □ # @ 0^+ ++	TAZ G 476 * 015 LL @ 9^+ ++	G	47	15	0.275	10	100	120	8	10	10	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29H^476^@H+□	TAZ H 476 * 015 L □ # @ 0^+ ++	TAZ H 476 * 015 LL @ 9^+ ++	H	47	15	0.18	10	100	120	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29H^686^@G+□	TAZ G 686 * 015 L □ # @ 0^+ ++	TAZ G 686 * 015 LL @ 9^+ ++	G	68	15	0.275	10	100	120	8	10	10	0.125	0.67	0.61	0.27	0.19	0.17	0.07
CWR29H^686^@H+□	TAZ H 686 * 015 L □ # @ 0^+ ++	TAZ H 686 * 015 LL @ 9^+ ++	H	68	15	0.18	10	100	120	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29H^107^@H+□	TAZ H 107 * 015 L □ # @ 0^+ ++	TAZ H 107 * 015 LL @ 9^+ ++	H	100	15	0.18	15	150	180	10	12	12	0.150	0.91	0.82	0.37	0.16	0.15	0.07
CWR29J^474^@A+□	TAZ A 474 * 020 L □ # @ 0^+ ++	TAZ A 474 * 020 LL @ 9^+ ++	A	0.47	20	7.5	1	10	12	8	8	10	0.050	0.08	0.07	0.03	0.61	0.55	0.24
CWR29J^684^@A+□	TAZ A 684 * 020 L □ # @ 0^+ ++	TAZ A 684 * 020 LL @ 9^+ ++	A	0.68	20	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR29 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/11										Typical Ripple Data by Rating						
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max				Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)								
CWR29 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case	µF @ 25°C	V @ +85°C	Ohms @ +25°C	+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)	
CWR29J^684^@B+□	TAZ B 684 * 020 L □ # @ 0 ^ + +	TAZ B 684 * 020 L L @ 9 ^ + +	B	0.68	20	5.6	1	10	12	6	8	8	0.070	0.11	0.10	0.03	0.63	0.56	0.25	
CWR29J^105^@A+□	TAZ A 105 * 020 L □ # @ 0 ^ + +	TAZ A 105 * 020 L L @ 9 ^ + +	A	1	20	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24	
CWR29J^105^@B+□	TAZ B 105 * 020 L □ # @ 0 ^ + +	TAZ B 105 * 020 L L @ 9 ^ + +	B	1	20	4.8	1	10	12	6	8	8	0.070	0.12	0.11	0.05	0.58	0.52	0.23	
CWR29J^155^@B+□	TAZ B 155 * 020 L □ # @ 0 ^ + +	TAZ B 155 * 020 L L @ 9 ^ + +	B	1.5	20	3.6	1	10	12	6	8	8	0.070	0.14	0.13	0.06	0.50	0.45	0.20	
CWR29J^155^@C+□	TAZ C 155 * 020 L □ # @ 0 ^ + +	TAZ C 155 * 020 L L @ 9 ^ + +	C	1.5	20	2.4	1	10	12	6	8	8	0.075	0.18	0.16	0.07	0.42	0.38	0.17	
CWR29J^225^@B+□	TAZ B 225 * 020 L □ # @ 0 ^ + +	TAZ B 225 * 020 L L @ 9 ^ + +	B	2.2	20	3.6	1	10	12	6	8	8	0.070	0.14	0.13	0.06	0.50	0.45	0.20	
CWR29J^225^@D+□	TAZ D 225 * 020 L □ # @ 0 ^ + +	TAZ D 225 * 020 L L @ 9 ^ + +	D	2.2	20	1.7	1	10	12	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15	
CWR29J^335^@D+□	TAZ D 335 * 020 L □ # @ 0 ^ + +	TAZ D 335 * 020 L L @ 9 ^ + +	D	3.3	20	2	1	10	12	6	8	8	0.080	0.20	0.18	0.08	0.40	0.36	0.16	
CWR29J^335^@E+□	TAZ E 335 * 020 L □ # @ 0 ^ + +	TAZ E 335 * 020 L L @ 9 ^ + +	E	3.3	20	1.2	1	10	12	6	8	8	0.090	0.27	0.25	0.11	0.33	0.30	0.13	
CWR29J^475^@E+□	TAZ E 475 * 020 L □ # @ 0 ^ + +	TAZ E 475 * 020 L L @ 9 ^ + +	E	4.7	20	1.7	1	10	12	6	8	8	0.090	0.23	0.21	0.09	0.39	0.35	0.16	
CWR29J^685^@E+□	TAZ E 685 * 020 L □ # @ 0 ^ + +	TAZ E 685 * 020 L L @ 9 ^ + +	E	6.8	20	1.5	2	20	24	6	8	8	0.090	0.24	0.22	0.10	0.37	0.33	0.15	
CWR29J^685^@F+□	TAZ F 685 * 020 L □ # @ 0 ^ + +	TAZ F 685 * 020 L L @ 9 ^ + +	F	6.8	20	0.7	2	20	24	6	8	8	0.100	0.38	0.34	0.15	0.26	0.24	0.11	
CWR29J^106^@E+□	TAZ E 106 * 020 L □ # @ 0 ^ + +	TAZ E 106 * 020 L L @ 9 ^ + +	E	10	20	1.5	2	20	24	6	8	8	0.090	0.24	0.22	0.10	0.37	0.33	0.15	
CWR29J^106^@F+□	TAZ F 106 * 020 L □ # @ 0 ^ + +	TAZ F 106 * 020 L L @ 9 ^ + +	F	10	20	0.8	2	20	24	6	8	8	0.100	0.35	0.32	0.14	0.28	0.25	0.11	
CWR29J^156^@F+□	TAZ F 156 * 020 L □ # @ 0 ^ + +	TAZ F 156 * 020 L L @ 9 ^ + +	F	15	20	0.8	3	30	36	6	8	8	0.100	0.35	0.32	0.14	0.28	0.25	0.11	
CWR29J^156^@G+□	TAZ G 156 * 020 L □ # @ 0 ^ + +	TAZ G 156 * 020 L L @ 9 ^ + +	G	15	20	0.275	3	30	36	6	8	8	0.125	0.67	0.61	0.27	0.19	0.17	0.07	
CWR29J^226^@G+□	TAZ G 226 * 020 L □ # @ 0 ^ + +	TAZ G 226 * 020 L L @ 9 ^ + +	G	22	20	0.625	4	40	48	6	8	8	0.125	0.45	0.40	0.18	0.28	0.25	0.11	
CWR29J^226^@H+□	TAZ H 226 * 020 L □ # @ 0 ^ + +	TAZ H 226 * 020 L L @ 9 ^ + +	H	22	20	0.18	4	40	48	6	8	8	0.150	0.91	0.82	0.37	0.16	0.15	0.07	
CWR29J^336^@H+□	TAZ H 336 * 020 L □ # @ 0 ^ + +	TAZ H 336 * 020 L L @ 9 ^ + +	H	33	20	0.18	6	60	72	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07	
CWR29J^476^@H+□	TAZ H 476 * 020 L □ # @ 0 ^ + +	TAZ H 476 * 020 L L @ 9 ^ + +	H	47	20	0.18	10	100	120	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07	
CWR29J^476^@X+□	TAZ X 476 * 020 L □ # @ 0 ^ + +	TAZ X 476 * 020 L L @ 9 ^ + +	X	47	20	0.11	10	100	120	8	10	10	0.200	1.35	1.21	0.54	0.15	0.13	0.06	
CWR29K^334^@A+□	TAZ A 334 * 025 L □ # @ 0 ^ + +	TAZ A 334 * 025 L L @ 9 ^ + +	A	0.33	25	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24	
CWR29K^474^@A+□	TAZ A 474 * 025 L □ # @ 0 ^ + +	TAZ A 474 * 025 L L @ 9 ^ + +	A	0.47	25	7.5	1	10	12	6	8	8	0.050	0.08	0.07	0.03	0.61	0.55	0.24	
CWR29K^684^@B+□	TAZ B 684 * 025 L □ # @ 0 ^ + +	TAZ B 684 * 025 L L @ 9 ^ + +	B	0.68	25	4	1	10	12	6	8	8	0.070	0.13	0.12	0.05	0.53	0.48	0.21	
CWR29K^105^@B+□	TAZ B 105 * 025 L □ # @ 0 ^ + +	TAZ B 105 * 025 L L @ 9 ^ + +	B	1	25	4	1	10	12	6	8	8	0.070	0.13	0.12	0.05	0.53	0.48	0.21	
CWR29K^105^@C+□	TAZ C 105 * 025 L □ # @ 0 ^ + +	TAZ C 105 * 025 L L @ 9 ^ + +	C	1	25	2.6	1	10	12	6	8	8	0.075	0.17	0.15	0.07	0.44	0.40	0.18	
CWR29K^155^@D+□	TAZ D 155 * 025 L □ # @ 0 ^ + +	TAZ D 155 * 025 L L @ 9 ^ + +	D	1.5	25	1.7	1	10	12	6	8	8	0.080	0.22	0.20	0.09	0.37	0.33	0.15	
CWR29K^225^@D+□	TAZ D 225 * 025 L □ # @ 0 ^ + +	TAZ D 225 * 025 L L @ 9 ^ + +	D	2.2	25	2	1	10	12	6	8	8	0.080	0.20	0.18	0.08	0.40	0.36	0.16	
CWR29K^225^@E+□	TAZ E 225 * 025 L □ # @ 0 ^ + +	TAZ E 225 * 025 L L @ 9 ^ + +	E	2.2	25	1	1	10	12	6	8	8	0.090	0.30	0.27	0.12	0.30	0.27	0.12	
CWR29K^335^@E+□	TAZ E 335 * 025 L □ # @ 0 ^ + +	TAZ E 335 * 025 L L @ 9 ^ + +	E	3.3	25	1.2	1	10	12	6	8	8	0.090	0.27	0.25	0.11	0.33	0.30	0.13	
CWR29K^475^@F+□	TAZ F 475 * 025 L □ # @ 0 ^ + +	TAZ F 475 * 025 L L @ 9 ^ + +	F	4.7	25	0.7	2	20	24	6	8	8	0.100	0.38	0.34	0.15	0.26	0.24	0.11	
CWR29K^685^@F+□	TAZ F 685 * 025 L □ # @ 0 ^ + +	TAZ F 685 * 025 L L @ 9 ^ + +	F	6.8	25	0.8	2	20	24	6	8	8	0.100	0.35	0.32	0.14	0.28	0.25	0.11	
CWR29K^685^@G+□	TAZ G 685 * 025 L □ # @ 0 ^ + +	TAZ G 685 * 025 L L @ 9 ^ + +	G	6.8	25	0.3	2	20	24	6	8	8	0.125	0.65	0.58	0.26	0.19	0.17	0.08	
CWR29K^106^@G+□	TAZ G 106 * 025 L □ # @ 0 ^ + +	TAZ G 106 * 025 L L @ 9 ^ + +	G	10	25	0.35	3	30	36	6	8	8	0.125	0.60	0.54	0.24	0.21	0.19	0.08	
CWR29K^156^@G+□	TAZ G 156 * 025 L □ # @ 0 ^ + +	TAZ G 156 * 025 L L @ 9 ^ + +	G	15	25	0.35	4	40	48	6	8	8	0.125	0.60	0.54	0.24	0.21	0.19	0.08	
CWR29K^156^@H+□	TAZ H 156 * 025 L □ # @ 0 ^ + +	TAZ H 156 * 025 L L @ 9 ^ + +	H	15	25	0.2	4	40	48	6	8	8	0.150	0.87	0.78	0.35	0.17	0.16	0.07	
CWR29K^226^@G+□	TAZ G 226 * 025 L □ # @ 0 ^ + +	TAZ G 226 * 025 L L @ 9 ^ + +	G	22	25	0.35	6	60	72	6	8	8	0.125	0.60	0.54	0.24	0.21	0.19	0.08	
CWR29K^226^@H+□	TAZ H 226 * 025 L □ # @ 0 ^ + +	TAZ H 226 * 025 L L @ 9 ^ + +	H	22	25	0.18	6	60	72	6	8	8	0.150	0.91	0.82	0.37	0.16	0.15	0.07	
CWR29K^336^@H+□	TAZ H 336 * 025 L □ # @ 0 ^ + +	TAZ H 336 * 025 L L @ 9 ^ + +	H	33	25	0.18	10	100	120	8	10	10	0.150	0.91	0.82	0.37	0.16	0.15	0.07	
CWR29M^224^@A+□	TAZ A 224 * 035 L □ # @ 0 ^ + +	TAZ A 224 * 035 L L @ 9 ^ + +	A	0.22	35	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31	
CWR29M^334^@A+□	TAZ A 334 * 035 L □ # @ 0 ^ + +	TAZ A 334 * 035 L L @ 9 ^ + +	A	0.33	35	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31	
CWR29M^474^@B+□	TAZ B 474 * 035 L □ # @ 0 ^ + +	TAZ B 474 * 035 L L @ 9 ^ + +	B	0.47	35	6.8	1	10	12	6	8	8	0.070	0.10	0.09	0.04	0.69	0.62	0.28	
CWR29M^684^@C+□	TAZ C 684 * 035 L □ # @ 0 ^ + +	TAZ C 684 * 035 L L @ 9 ^ + +	C	0.68	35	4	1	10	12	6	8	8	0.075	0.14	0.12	0.05	0.55	0.49	0.22	
CWR29M^105^@D+□	TAZ D 105 * 035 L □ # @ 0 ^ + +	TAZ D 105 * 035 L L @ 9 ^ + +	D	1	35	2.2	1	10	12	6	8	8	0.080	0.19	0.17	0.08	0.42	0.38	0.17	
CWR29M^155^@E+□	TAZ E 155 * 035 L □ # @ 0 ^ + +	TAZ E 155 * 035 L L @ 9 ^ + +	E	1.5	35	1.3	1	10	12	6	8	8	0.090	0.26	0.24	0.11	0.34	0.31	0.14	
CWR29M^335^@F+□	TAZ F 335 * 035 L □ # @ 0 ^ + +	TAZ F 335 * 035 L L @ 9 ^ + +	F	3.3	35	0.7	1	10	12	6	8	8	0.100	0.38	0.34	0.15	0.26	0.24	0.11	
CWR29M^475^@G+□	TAZ G 475 * 035 L □ # @ 0 ^ + +	TAZ G 475 * 035 L L @ 9 ^ + +	G	4.7	35	0.375	2	20	24	6	8	8	0.125	0.58	0.52	0.23	0.22	0.19	0.09	
CWR29M^685^@G+□	TAZ G 685 * 035 L □ # @ 0 ^ + +	TAZ G 685 * 035 L L @ 9 ^ + +	G	6.8	35	0.375	3	30	36	6	8	8	0.125	0.58	0.52	0.23	0.22	0.19	0.09	
CWR29M^685^@H+□	TAZ H 685 * 035 L □ # @ 0 ^ + +	TAZ H 685 * 035 L L @ 9 ^ + +	H	6.8	35	0.5	3	30	36	6	8	8	0.150	0.55	0.49	0.22	0.27	0.25	0.11	
CWR29M^106^@H+□	TAZ H 106 * 035 L □ # @ 0 ^ + +	TAZ H 106 * 035 L L @ 9 ^ + +	H	10	35	0.5	4	40	48	8	10	10	0.150	0.55	0.49	0.22	0.27	0.25	0.11	
CWR29N^104^@A+□	TAZ A 104 * 050 L □ # @ 0 ^ + +	TAZ A 104 * 050 L L @ 9 ^ + +	A	0.1	50	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31	
CWR29N^154^@A+□	TAZ A 154 * 050 L □ # @ 0 ^ + +	TAZ A 154 * 050 L L @ 9 ^ + +	A	0.15	50	12	1	10	12	6	8	8	0.050	0.06	0.06	0.03	0.77	0.70	0.31	

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



CWR29 - MIL-PRF-55365/11 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/11							Typical Ripple Data by Rating								
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max +25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	DF Max +(85/125)°C (%)	-55°C (%)	Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
CWR29 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case																
CWR29N^224*@B+	TAZ B 224 * 050 L □ # @ 0 ^ ++	TAZ B 224 * 050 L L @ 9 ^ ++	B	0.22	50	6.8	1	10	12	6	8	8	0.070	0.10	0.09	0.04	0.69	0.62	0.28
CWR29N^334*@B+	TAZ B 334 * 050 L □ # @ 0 ^ ++	TAZ B 334 * 050 L L @ 9 ^ ++	B	0.33	50	4.8	1	10	12	6	8	8	0.070	0.12	0.11	0.05	0.58	0.52	0.23
CWR29N^474*@C+	TAZ C 474 * 050 L □ # @ 0 ^ ++	TAZ C 474 * 050 L L @ 9 ^ ++	C	0.47	50	3.2	1	10	12	6	8	8	0.075	0.15	0.14	0.06	0.49	0.44	0.20
CWR29N^684*@D+	TAZ D 684 * 050 L □ # @ 0 ^ ++	TAZ D 684 * 050 L L @ 9 ^ ++	D	0.68	50	2.3	1	10	12	6	8	8	0.080	0.19	0.17	0.07	0.43	0.39	0.17
CWR29N^105*@E+	TAZ E 105 * 050 L □ # @ 0 ^ ++	TAZ E 105 * 050 L L @ 9 ^ ++	E	1	50	1.7	1	10	12	6	8	8	0.090	0.23	0.21	0.09	0.39	0.35	0.16
CWR29N^155*@F+	TAZ F 155 * 050 L □ # @ 0 ^ ++	TAZ F 155 * 050 L L @ 9 ^ ++	F	1.5	50	1.1	1	10	12	6	8	8	0.100	0.30	0.27	0.12	0.33	0.30	0.13
CWR29N^225*@F+	TAZ F 225 * 050 L □ # @ 0 ^ ++	TAZ F 225 * 050 L L @ 9 ^ ++	F	2.2	50	0.7	2	20	24	6	8	8	0.100	0.38	0.34	0.15	0.26	0.24	0.11
CWR29N^335*@G+	TAZ G 335 * 050 L □ # @ 0 ^ ++	TAZ G 335 * 050 L L @ 9 ^ ++	G	3.3	50	0.5	2	20	24	6	8	8	0.125	0.50	0.45	0.20	0.25	0.23	0.10
CWR29N^475*@H+	TAZ H 475 * 050 L □ # @ 0 ^ ++	TAZ H 475 * 050 L L @ 9 ^ ++	H	4.7	50	0.5	3	30	36	6	8	8	0.150	0.55	0.49	0.22	0.27	0.25	0.11

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TAZ Series



Extended Range - 63V COTS-Plus Rating

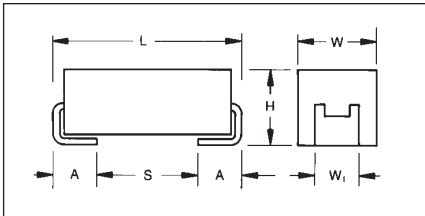


The TAZ part has fully molded, compliant leadframe construction designed for use in applications utilizing solder (Reflow, Wave or Vapor Phase), conductive adhesive or thermal compression bonding techniques. Each chip is marked with polarity, capacitance code and rated voltage. The 63 volt rated parts are ideal for avionic output power supply filtering. Many systems utilize a 28 volt bus and this new rating surpasses the recommended

50% derating for optimized reliability in these applications. The series has Weibull "B" level and all surge options ("A", "B" & "C") available. There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (These are "H", "K", "C" and "B" termination respectively per MIL-PRF-55365).

CASE DIMENSIONS:

millimeters (inches)



Case Code	Length (L) ±0.38 (0.015)	Width (W) ±0.38 (0.015)	Height (H) ±0.38 (0.015)	Term. Width (W ₁)	Term. Length (A) ±0.13 (0.005)	S min	Typical Weight (g)
D	3.81 (0.150)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	1.65 (0.065)	0.045
E	5.08 (0.200)	2.54 (0.100)	1.27 (0.050)	2.41+0.13/-0.25 (0.095+0.005/-0.010)	0.76 (0.030)	2.92 (0.115)	0.065
F	5.59 (0.220)	3.43 (0.135)	1.78 (0.070)	3.30±0.13 (0.130±0.005)	0.76 (0.030)	3.43 (0.135)	0.125
G	6.73 (0.265)	2.79 (0.110)	2.79 (0.110)	2.67±0.13 (0.105±0.005)	1.27 (0.050)	3.56 (0.140)	0.205
H	7.24 (0.285)	3.81 (0.150)	2.79 (0.110)	3.68+0.13/-0.51 (0.145+0.005/-0.020)	1.27 (0.050)	4.06 (0.160)	0.035

MARKING

(White marking on black body)



Polarity Stripe (+)

Capacitance Code
Rated Voltage

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage DC (V _R) at 85°C
µF	Code	63V
0.68	684	D
1.0	105	E
1.5	155	F
2.2	225	F
3.3	335	G
4.7	475	H
6.8	685	H



TAZ Series



Extended Range - 63V COTS-Plus Rating

HOW TO ORDER

TAZ	H	685	*	063	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 63 = 63Vdc	Standard or Low ESR Range C = Std ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle	Inspection Level L = Group A S = Standard Conformance	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. Z = Non - ER	Qualification Level 0 = NA	Termination Finish H = Solder Plated 0 = Fused Solder Plated 7 = Matte Sn 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C		
Capacitance Range:	0.68 μF to 6.8 μF		
Capacitance Tolerance:	±5%; ±10%; ±20%		
Rated Voltage: (V _R)	≤85°C:	63	
Category Voltage: (V _C)	125°C:	42	
Surge Voltage: (V _S)	≤85°C:	82	
	125°C:	50	
Temperature Range:	-55°C to +125°C		

TAZ Series



Extended Range - 63V COTS-Plus Rating

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating									Typical Ripple Data by Rating						
		Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
					+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)							
AVX P/N	Case																
TAZ D 684*063C□#@0 ^ ++	D	0.68	63	10	1	10	12	6	8	8	0.080	0.09	0.08	0.04	0.89	0.80	0.36
TAZ E 105*063C□#@0 ^ ++	E	1	63	7	1	10	12	6	8	8	0.090	0.11	0.10	0.05	0.79	0.71	0.32
TAZ F 155*063C□#@0 ^ ++	F	1.5	63	5	1.4	14	17	6	8	8	0.100	0.14	0.13	0.06	0.71	0.64	0.28
TAZ F 225*063C□#@0 ^ ++	F	2.2	63	3	2.1	21	25	6	8	8	0.100	0.18	0.16	0.07	0.55	0.49	0.22
TAZ G 335*063C□#@0 ^ ++	G	3.3	63	2.5	3.1	31	37	6	8	8	0.125	0.22	0.20	0.09	0.56	0.50	0.22
TAZ H 475*063C□#@0 ^ ++	H	4.7	63	2	4.5	45	54	6	8	8	0.150	0.27	0.25	0.11	0.55	0.49	0.22
TAZ H 685*063C□#@0 ^ ++	H	6.8	63	2	6.5	65	78	6	8	8	0.150	0.27	0.25	0.11	0.55	0.49	0.22

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TCP Series



TCP Series Low ESR Tantalum Modules



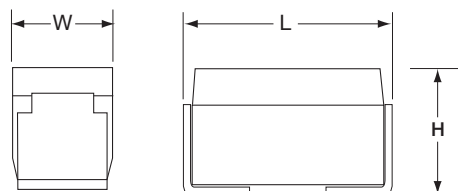
TCP Series tantalum modules represents the highest packing density for high capacitance / voltage available in surface mount tantalum.

These modules feature stacked assemblies of CWR29 capacitors which provide ultra low ESR and utilize established reliability capacitors (Weibull Grade voltage conditioning) in accordance with MIL-PRF-55365. They can also be supplied with SRC9000 Space Level components.

The stacked construction of fully molded capacitors is compatible with a wide range of SMT board assembly processes including wave or reflow solder or conductive epoxy.

There are two termination finishes available: hot solder dipped ("C") and gold plated ("B").

The molding compound has been selected to meet the requirements of UL94V-0 and outgassing requirements of NASA SP-R-0022A.



Note: Additional form factors and ratings are available. Contact plant for details.

CAPACITANCE AND RATED VOLTAGE CASE SIZE (ESR IN mΩ)

Capacitance		Rated voltage DC (V_R) to 85°C						
μF	Code	6V	10V	15V	20V	25V	35V	50V
9.4	945							2H (200)
18.8	196							4H (100)
20	206						2H (200)	
28.2	286							6H (67)
40	406						4H (100)	
60	606						6H (67)	
66	666					2H (85)		
94	946				2H (75)			
132	137					4H (43)		
188	197				4H (38)			
198	207					6H (28)		
200	207			2H (63)				
282	287				6H (25)			
400	407			4H (31)				
440	447		2H (50)					
600	607			6H (21)				
660	667	2H (50)						
880	887		4H (25)					
1,320	138	4H (25)	6H (17)					
1,980	208	6H (17)						

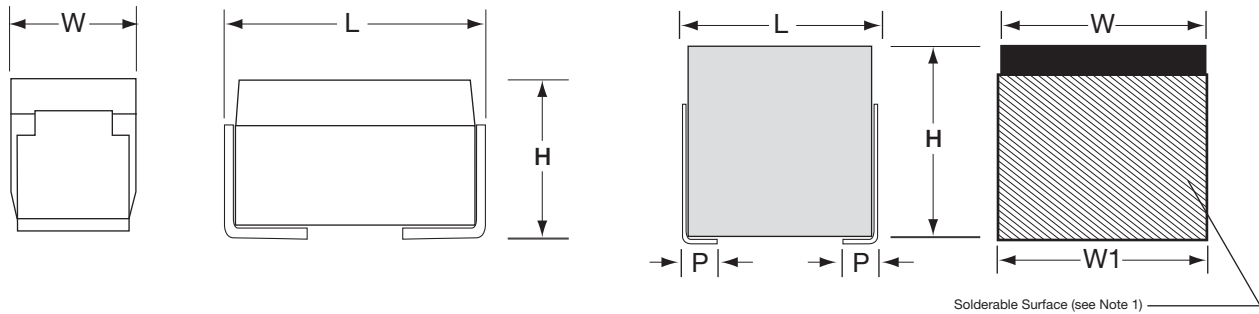


TCP Series



TCP Series Low ESR Tantalum Modules

DIMENSIONS



CASE DIMENSIONS:

millimeters (inches)

Case Code	Length (L) ±0.38 (0.015)	Width (W) ±0.38 (0.015)	Height (H) ±0.38 (0.015)	Term. Width (W ₁) ±0.38 (0.015)	Term. Length (P) For Reference Only
2H	7.82 (0.308)	4.06 (0.160)	6.10 (0.240)	4.06 (0.160)	1.52 (0.060)
4H	7.82 (0.308)	8.13 (0.320)	6.10 (0.240)	8.13 (0.320)	1.52 (0.060)
6H	7.82 (0.308)	8.13 (0.320)	9.14 (0.360)	8.13 (0.320)	1.52 (0.060)

Additional form factors and ratings are available – contact plant for details.

HOW TO ORDER

TC	2H	945	K	050	L	R	#	@	0	^	++
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	Standard or Low ESR Range	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	M = ±20% K = ±10% J = ±5%	006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	L = Low ESR	B = Bulk R = 7" T&R	S = Std. Conformance L = Group A D = DSCC DWG	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. Z = Non-ER	0 = N/A 9 = SRC9000	8 = Hot Solder Dipped 9 = Gold Plated	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	9.4 μF to 1,980 μF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage: (V _R)	≤85°C:	6	10	15	15	20	25	35	50	
Category Voltage: (V _C)	125°C:	4	7	10	10	13	17	23	33	
Surge Voltage: (V _S)	≤85°C:	8	13	20	20	26	32	46	65	
	125°C:	5	8	13	13	16	20	28	40	
Temperature Range:	-55°C to +125°C									



TCP Series



TCP Series Low ESR Tantalum Modules

RATINGS & PART NUMBER REFERENCE

2-STACK			Parametric Specifications by Rating									Typical Ripple Data by Rating					
AVX P/N	Case	Cap µF	Volt V	ESR @ 100 kHz +25°C mΩ	DC Leakage (max) µA			Disspation Factor (max) %			100kHz Ripple Current Rating			100kHz Ripple Voltage Rating			
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	A	A	A	V	V	V	
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	+25°C	+85°C	+125°C	+25°C	+85°C	+125°C	
TC2H 667	*006L#D^00++	2H	660	6	50	39.6	396	495	10	12	12	2.4	2.2	1.0	0.12	0.11	0.05
TC2H 447	*010L#D^00++	2H	440	10	50	44	440	550	10	12	12	2.4	2.2	1.0	0.12	0.11	0.05
TC2H 207	*015L#D^00++	2H	200	15	63	30	300	375	10	12	12	2.2	2.0	0.9	0.14	0.12	0.05
TC2H 946	*020L#D^00++	2H	94	20	75	18.8	188	235	8	10	10	2.0	1.8	0.8	0.15	0.14	0.06
TC2H 666	*025L#D^00++	2H	66	25	85	16.5	165	206	8	10	10	1.9	1.7	0.8	0.16	0.14	0.06
TC2H 206	*035L#D^00++	2H	20	35	200	7	70	88	8	10	10	1.2	1.1	0.5	0.24	0.22	0.10
TC2H 945	*050L#D^00++	2H	9.4	50	200	4.7	47	59	6	8	8	1.2	1.1	0.5	0.24	0.22	0.10

4-STACK			Parametric Specifications by Rating									Typical Ripple Data by Rating					
AVX P/N	Case	Cap µF	Volt V	ESR @ 100 kHz +25°C mΩ	DC Leakage (max) µA			Disspation Factor (max) %			100kHz Ripple Current Rating			100kHz Ripple Voltage Rating			
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	A	A	A	V	V	V	
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	+25°C	+85°C	+125°C	+25°C	+85°C	+125°C	
TC4H 138	*006L#D^00++	4H	1320	6	25	79.2	792	990	10	12	12	4.2	3.8	1.7	0.11	0.10	0.04
TC4H 887	*010L#D^00++	4H	880	10	25	88	880	1100	10	12	12	4.2	3.8	1.7	0.11	0.10	0.04
TC4H 407	*015L#D^00++	4H	400	15	31	60	600	750	10	12	12	3.8	3.4	1.5	0.12	0.11	0.05
TC4H 197	*020L#D^00++	4H	188	20	38	37.6	376	470	8	10	10	3.5	3.2	1.4	0.13	0.12	0.05
TC4H 137	*025L#D^00++	4H	132	25	43	33	330	413	8	10	10	3.2	2.9	1.3	0.14	0.13	0.06
TC4H 406	*035L#D^00++	4H	40	35	100	14	140	175	8	10	10	2.1	1.9	0.8	0.21	0.19	0.08
TC4H 196	*050L#D^00++	4H	18.8	50	100	9.4	94	118	6	8	8	2.1	1.9	0.8	0.21	0.19	0.08

6-STACK			Parametric Specifications by Rating									Typical Ripple Data by Rating					
AVX P/N	Case	Cap µF	Volt V	ESR @ 100 kHz +25°C mΩ	DC Leakage (max) µA			Disspation Factor (max) %			100kHz Ripple Current Rating			100kHz Ripple Voltage Rating			
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	A	A	A	V	V	V	
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C	+25°C	+85°C	+125°C	+25°C	+85°C	+125°C	
TC6H 208	*006L#D^00++	6H	1980	6	17	118.8	1188	1485	10	12	12	5.9	5.3	2.4	0.10	0.09	0.04
TC6H 138	*010L#D^00++	6H	1320	10	17	132	1320	1650	10	12	12	5.9	5.3	2.4	0.10	0.09	0.04
TC6H 607	*015L#D^00++	6H	600	15	21	90	900	1125	10	12	12	5.2	4.7	2.1	0.11	0.10	0.04
TC6H 287	*020L#D^00++	6H	282	20	25	56.4	564	705	8	10	10	4.8	4.3	1.9	0.12	0.11	0.05
TC6H 207	*025L#D^00++	6H	198	25	28	49.5	495	619	8	10	10	4.5	4.1	1.8	0.13	0.11	0.05
TC6H 606	*035L#D^00++	6H	60	35	67	21	210	263	8	10	10	2.9	2.6	1.2	0.19	0.17	0.08
TC6H 286	*050L#D^00++	6H	28.2	50	67	14.1	141	176	6	8	8	2.9	2.6	1.2	0.19	0.17	0.08

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBJ Series



CWR11 - MIL-PRF-55365/8 Established Reliability, COTS-Plus & Space Level



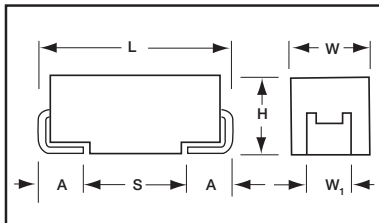
Fully qualified to MIL-PRF-55365/8, the CWR11 is the military version of EIA-535BAAC, with four case sizes designed for maximum packaging efficiency on 8mm & 12mm tape for high volume production (ensuring no TCE mismatch with any substrate). This construction is compatible with a wide range of SMT board assembly processes including wave or reflow solder, conductive epoxy or compression bonding techniques. The part also carries full polarity, capacitance / voltage and JAN brand marking.

For Space Level applications, AVX SRC9000 qualification is recommended (see ratings table for part number availability).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these are "H", "K", "C" and "B" termination, respectively, per MIL-PRF-55365).

The molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of NASA SP-R-0022A.

The series is qualified to MIL-PRF-55365 Weibull "B", "C", "D" and "T" levels, with all surge options ("A", "B" & "C") available.



MARKING

(Brown marking on gold body)



Polarity Stripe (+)

"J" for "JAN" Brand
Capacitance Code

Rated Voltage
Manufacturer's ID

CASE DIMENSIONS: millimeters (inches)

Case Code	EIA Metric	Length (L)	Width (W)	Height (H)	Term. Width (W ₁) ±0.10 (±0.004)	Term. Length A ±0.30(±0.012)	S min
A	3216-18	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.60±0.20 (0.063±0.008)	1.20 (0.047)	0.80 (0.031)	1.80 (0.071)
B	3528-21	3.50±0.20 (0.138±0.008)	2.80±0.20 (0.110±0.008)	1.90±0.20 (0.075±0.008)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032-28	6.00±0.30 (0.236±0.012)	3.20±0.30 (0.126±0.012)	2.50±0.30 (0.098±0.012)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30±0.30 (0.287±0.012)	4.30±0.30 (0.169±0.012)	2.80±0.30 (0.110±0.012)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

CAPACITANCE AND RATED VOLTAGE, V_R (MIL VOLTAGE CODE) RANGE CASE SIZE

Capacitance		Rated voltage DC (V _R) to 85°C							
μF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)	25V (K)	35V (M)	50V (N)
0.10	104							A	A
0.15	154							A	B
0.22	224							A	B
0.33	334						A	A	B
0.47	474					A	A	B	C
0.68	684				A	A	B	B	C
1.0	105			A	A	A	B	B	C
1.5	155		A	A	A	B	B	C	D
2.2	225	A	A	A	B	B	C	C	D
3.3	335		A	B	B	B	C	C	D
4.7	475	A	B	B	B	C	C	D	D
6.8	685	B	B	B	B	C	D	D	
10	106	B	B		C		D		
15	156	B	C	C		D	D		
22	226		C		D	D			
33	336	C		D	D				
47	476		D						
68	686	D	D						
100	107	D							
150	157								
220	227								
330	337								



HOW TO ORDER

COTS-PLUS & MIL QPL (CWR11):

TBJ	D	686	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A M = MIL (JAN) CWR11	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

CWR11 P/N CROSS REFERENCE:

CWR11	D	^	686	*	@	+	□
Type	Voltage Code C = 4Vdc D = 6Vdc F = 10Vdc H = 15Vdc J = 20Vdc K = 25Vdc M = 35Vdc N = 50Vdc	Termination Finish H = Solder Plated K = Solder Fused Dipped C = Hot Solder Dipped B = Gold Plated	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level A = Non-ER	Surge Test Option A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C C = 10 cycles, -55°C & +85°C before Weibull If blank, None required	Packaging Bulk = Standard TR = 7" T&R TR13 = 13" T&R W = Waffle See page 5 for additional packaging options.

SPACE LEVEL OPTIONS TO SRC9000*:

TBJ	D	686	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	0.1 μF to 100 μF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage: (V _R)	≤85°C:	4	6	10	16	20	25	35	50	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	32	46	65	
	125°C:	3.4	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C									

TBJ Series



CWR11 - MIL-PRF-55365/8 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/8							Typical Ripple Data by Rating								
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max		Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)								-55°C (%)
CWR11 P/N	AVX COTS-Plus P/N	AVX SRC9000 P/N	Case																
CWR11C^225^@+□	TBJA 225 * 004 C □ # @ 0 ^ + +	TBJA 225 * 004 C □ L @ 0 ^ + +	A	2.2	4	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11C^475^@+□	TBJA 475 * 004 C □ # @ 0 ^ + +	TBJA 475 * 004 C □ L @ 0 ^ + +	A	4.7	4	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11C^685^@+□	TBJB 685 * 004 C □ # @ 0 ^ + +	TBJB 685 * 004 C □ L @ 9 ^ + +	B	6.8	4	5.5	0.5	5	6	6	9	9	0.085	0.12	0.11	0.05	0.68	0.62	0.27
CWR11C^106^@+□	TBJB 106 * 004 C □ # @ 0 ^ + +	TBJB 106 * 004 C □ L @ 9 ^ + +	B	10	4	4	0.5	5	6	6	9	9	0.085	0.15	0.13	0.06	0.58	0.52	0.23
CWR11C^156^@+□	TBJB 156 * 004 C □ # @ 0 ^ + +	TBJB 156 * 004 C □ L @ 9 ^ + +	B	15	4	3.5	0.6	6	7.2	6	9	9	0.085	0.16	0.14	0.06	0.55	0.49	0.22
CWR11C^336^@+□	TBJC 336 * 004 C □ # @ 0 ^ + +	TBJC 336 * 004 C □ L @ 9 ^ + +	C	33	4	2.2	1.3	13	15.6	6	9	9	0.110	0.22	0.20	0.09	0.49	0.44	0.20
CWR11C^686^@+□	TBJD 686 * 004 C □ # @ 0 ^ + +	TBJD 686 * 004 C □ L @ 9 ^ + +	D	68	4	1.1	2.7	27	32.4	6	9	9	0.150	0.37	0.33	0.15	0.41	0.37	0.16
CWR11C^107^@+□	TBJD 107 * 004 C □ # @ 0 ^ + +	TBJD 107 * 004 C □ L @ 9 ^ + +	D	100	4	0.9	4	40	48	8	12	12	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR11D^155^@+□	TBJA 155 * 006 C □ # @ 0 ^ + +	TBJA 155 * 006 C □ L @ 9 ^ + +	A	1.5	6	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11D^225^@+□	TBJA 225 * 006 C □ # @ 0 ^ + +	TBJA 225 * 006 C □ L @ 9 ^ + +	A	2.2	6	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11D^335^@+□	TBJA 335 * 006 C □ # @ 0 ^ + +	TBJA 335 * 006 C □ L @ 9 ^ + +	A	3.3	6	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11D^475^@+□	TBJB 475 * 006 C □ # @ 0 ^ + +	TBJB 475 * 006 C □ L @ 9 ^ + +	B	4.7	6	5.5	0.5	5	6	6	9	9	0.085	0.12	0.11	0.05	0.68	0.62	0.27
CWR11D^685^@+□	TBJB 685 * 006 C □ # @ 0 ^ + +	TBJB 685 * 006 C □ L @ 9 ^ + +	B	6.8	6	4.5	0.5	5	6	6	9	9	0.085	0.14	0.12	0.05	0.62	0.56	0.25
CWR11D^106^@+□	TBJB 106 * 006 C □ # @ 0 ^ + +	TBJB 106 * 006 C □ L @ 9 ^ + +	B	10	6	3.5	0.6	6	7.2	6	9	9	0.085	0.16	0.14	0.06	0.55	0.49	0.22
CWR11D^156^@+□	TBJC 156 * 006 C □ # @ 0 ^ + +	TBJC 156 * 006 C □ L @ 9 ^ + +	C	15	6	3	0.9	9	10.8	6	9	9	0.110	0.19	0.17	0.08	0.57	0.52	0.23
CWR11D^226^@+□	TBJC 226 * 006 C □ # @ 0 ^ + +	TBJC 226 * 006 C □ L @ 9 ^ + +	C	22	6	2.2	1.4	14	16.8	6	9	9	0.110	0.22	0.20	0.09	0.49	0.44	0.20
CWR11D^476^@+□	TBJD 476 * 006 C □ # @ 0 ^ + +	TBJD 476 * 006 C □ L @ 9 ^ + +	D	47	6	1.1	2.8	28	33.6	6	9	9	0.150	0.37	0.33	0.15	0.41	0.37	0.16
CWR11D^686^@+□	TBJD 686 * 006 C □ # @ 0 ^ + +	TBJD 686 * 006 C □ L @ 9 ^ + +	D	68	6	0.9	4.3	43	51.6	6	9	9	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR11F^105^@+□	TBJA 105 * 010 C □ # @ 0 ^ + +	TBJA 105 * 010 C □ L @ 9 ^ + +	A	1	10	10	0.5	5	6	4	6	6	0.075	0.09	0.08	0.03	0.87	0.78	0.35
CWR11F^155^@+□	TBJA 155 * 010 C □ # @ 0 ^ + +	TBJA 155 * 010 C □ L @ 9 ^ + +	A	1.5	10	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11F^225^@+□	TBJA 225 * 010 C □ # @ 0 ^ + +	TBJA 225 * 010 C □ L @ 9 ^ + +	A	2.2	10	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11F^335^@+□	TBJB 335 * 010 C □ # @ 0 ^ + +	TBJB 335 * 010 C □ L @ 9 ^ + +	B	3.3	10	5.5	0.5	5	6	6	9	9	0.085	0.12	0.11	0.05	0.68	0.62	0.27
CWR11F^475^@+□	TBJB 475 * 010 C □ # @ 0 ^ + +	TBJB 475 * 010 C □ L @ 9 ^ + +	B	4.7	10	4.5	0.5	5	6	6	9	9	0.085	0.14	0.12	0.05	0.62	0.56	0.25
CWR11F^685^@+□	TBJB 685 * 010 C □ # @ 0 ^ + +	TBJB 685 * 010 C □ L @ 9 ^ + +	B	6.8	10	3.5	0.7	7	8.4	6	9	9	0.085	0.16	0.14	0.06	0.55	0.49	0.22
CWR11F^156^@+□	TBJC 156 * 010 C □ # @ 0 ^ + +	TBJC 156 * 010 C □ L @ 9 ^ + +	C	15	10	2.5	1.5	15	18	6	9	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
CWR11F^336^@+□	TBJD 336 * 010 C □ # @ 0 ^ + +	TBJD 336 * 010 C □ L @ 9 ^ + +	D	33	10	1.1	3.3	33	39.6	6	9	9	0.150	0.37	0.33	0.15	0.41	0.37	0.16
CWR11F^476^@+□	TBJD 476 * 010 C □ # @ 0 ^ + +	TBJD 476 * 010 C □ L @ 9 ^ + +	D	47	10	0.9	4.7	47	56.4	6	9	9	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR11H^684^@+□	TBJA 684 * 015 C □ # @ 0 ^ + +	TBJA 684 * 015 C □ L @ 9 ^ + +	A	0.68	15	12	0.5	5	6	4	6	6	0.075	0.08	0.07	0.03	0.95	0.85	0.38
CWR11H^105^@+□	TBJA 105 * 015 C □ # @ 0 ^ + +	TBJA 105 * 015 C □ L @ 9 ^ + +	A	1	15	10	0.5	5	6	4	6	6	0.075	0.09	0.08	0.03	0.87	0.78	0.35
CWR11H^155^@+□	TBJA 155 * 015 C □ # @ 0 ^ + +	TBJA 155 * 015 C □ L @ 9 ^ + +	A	1.5	15	8	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
CWR11H^225^@+□	TBJB 225 * 015 C □ # @ 0 ^ + +	TBJB 225 * 015 C □ L @ 9 ^ + +	B	2.2	15	5.5	0.5	5	6	6	9	9	0.085	0.12	0.11	0.05	0.68	0.62	0.27
CWR11H^335^@+□	TBJB 335 * 015 C □ # @ 0 ^ + +	TBJB 335 * 015 C □ L @ 9 ^ + +	B	3.3	15	5	0.5	5	6	6	8	9	0.085	0.13	0.12	0.05	0.65	0.59	0.26
CWR11H^475^@+□	TBJB 475 * 015 C □ # @ 0 ^ + +	TBJB 475 * 015 C □ L @ 9 ^ + +	B	4.7	15	4	0.7	7	8.4	6	9	9	0.085	0.15	0.13	0.06	0.58	0.52	0.23
CWR11H^106^@+□	TBJC 106 * 015 C □ # @ 0 ^ + +	TBJC 106 * 015 C □ L @ 9 ^ + +	C	10	15	2.5	1.6	16	19.2	6	8	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
CWR11H^226^@+□	TBJD 226 * 015 C □ # @ 0 ^ + +	TBJD 226 * 015 C □ L @ 9 ^ + +	D	22	15	1.1	3.3	33	39.6	6	8	9	0.150	0.37	0.33	0.15	0.41	0.37	0.16
CWR11H^336^@+□	TBJD 336 * 015 C □ # @ 0 ^ + +	TBJD 336 * 015 C □ L @ 9 ^ + +	D	33	15	0.9	5.3	53	63.6	6	9	9	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR11J^474^@+□	TBJA 474 * 020 C □ # @ 0 ^ + +	TBJA 474 * 020 C □ L @ 9 ^ + +	A	0.47	20	14	0.5	5	6	4	6	6	0.075	0.07	0.07	0.03	1.02	0.92	0.41
CWR11J^684^@+□	TBJA 684 * 020 C □ # @ 0 ^ + +	TBJA 684 * 020 C □ L @ 9 ^ + +	A	0.68	20	12	0.5	5	6	4	6	6	0.075	0.08	0.07	0.03	0.95	0.85	0.38
CWR11J^105^@+□	TBJA 105 * 020 C □ # @ 0 ^ + +	TBJA 105 * 020 C □ L @ 9 ^ + +	A	1	20	10	0.5	5	6	4	6	6	0.075	0.09	0.08	0.03	0.87	0.78	0.35
CWR11J^155^@+□	TBJB 155 * 020 C □ # @ 0 ^ + +	TBJB 155 * 020 C □ L @ 9 ^ + +	B	1.5	20	6	0.5	5	6	6	9	9	0.085	0.12	0.11	0.05	0.71	0.64	0.29
CWR11J^225^@+□	TBJB 225 * 020 C □ # @ 0 ^ + +	TBJB 225 * 020 C □ L @ 9 ^ + +	B	2.2	20	5	0.5	5	6	6	8	9	0.085	0.13	0.12	0.05	0.65	0.59	0.26
CWR11J^335^@+□	TBJB 335 * 020 C □ # @ 0 ^ + +	TBJB 335 * 020 C □ L @ 9 ^ + +	B	3.3	20	4	0.7	7	8.4	6	9	9	0.085	0.15	0.13	0.06	0.58	0.52	0.23
CWR11J^475^@+□	TBJC 475 * 020 C □ # @ 0 ^ + +	TBJC 475 * 020 C □ L @ 9 ^ + +	C	4.7	20	3	1	10	12	6	8	9	0.110	0.19	0.17	0.08	0.57	0.52	0.23
CWR11J^685^@+□	TBJC 685 * 020 C □ # @ 0 ^ + +	TBJC 685 * 020 C □ L @ 9 ^ + +	C	6.8	20	2.4	1.4	14	16.8	6	9	9	0.110	0.21	0.19	0.09	0.51	0.46	0.21
CWR11J^156^@+□	TBJD 156 * 020 C □ # @ 0 ^ + +	TBJD 156 * 020 C □ L @ 9 ^ + +	D	15	20	1.1	3	30	36	6	8	9	0.150	0.37	0.33	0.15	0.41	0.37	0.16
CWR11J^226^@+□	TBJD 226 * 020 C □ # @ 0 ^ + +	TBJD 226 * 020 C □ L @ 9 ^ + +	D	22	20	0.9	4.4	44	52.8	6	9	9	0.150	0.41	0.37	0.16	0.37	0.33	0.15
CWR11K^334^@+□	TBJA 334 * 025 C □ # @ 0 ^ + +	TBJA 334 * 025 C □ L @ 9 ^ + +	A	0.33	25	15	0.5	5	6	4	6	6	0.075	0.07	0.06	0.03	1.06	0.95	0.42
CWR11K^474^@+□	TBJA 474 * 025 C □ # @ 0 ^ + +	TBJA 474 * 025 C □ L @ 9 ^ + +	A	0.47	25	14	0.5	5	6	4	6	6	0.075	0.07	0.06	0.03	1.02	0.92	0.41
CWR11K^684^@+□	TBJB 684 * 025 C □ # @ 0 ^ + +	TBJB 684 * 025 C □ L @ 9 ^ + +	B	0.68	25	7.5	0.5	5	6	4	6	6	0.085	0.11	0.10	0.04	0.80	0.72	0.32
CWR11K^105^@+□	TBJB 105 * 025 C □ # @ 0 ^ + +	TBJB 105 * 025 C □ L @ 9 ^ + +	B	1	25	6.5	0.5	5	6	4	6	6	0.085	0.11	0.10	0.05	0.74	0.67	0.30
CWR11K^155^@+□	TBJB 155 * 025 C □ # @ 0 ^ + +	TBJB 155 * 025 C □ L @ 9 ^ + +	B	1.5	25	6.5	0.5	5	6	6	8	9	0.085	0.11	0.10	0.05	0.74	0.67	0.30
CWR11K^225^@+□	TBJC 225 * 025 C □ # @ 0 ^ + +	TBJC 225 * 025 C □ L @ 9 ^ + +	C	2.2	25	3.5	0.6	6	7.2	6	9	9	0.110	0.18	0.16	0.07	0.62	0.56	0.25
CWR11K^335^@+□	TBJC 335 * 025 C □ # @ 0 ^ + +	TBJC 335 * 025 C □ L @ 9 ^ + +	C	3.3	25	3.5	0.9	9	10.8	6	8	9	0.110	0.18	0.16	0.07	0.62	0.56	0.25
CWR11K^475^@+□	TBJC 475 * 025 C □ # @ 0 ^ + +	TBJC 475 * 025 C □ L @ 9 ^ + +	C	4.7	25	2.5	1.2	12	14.4	6	9	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
CWR11K^685^@+□	TBJD 685 * 025 C □ # @ 0 ^ + +	TBJD 685 * 025 C □ L @ 9 ^ + +	D	6.8	25	1.4	1.7	17	20.4	6	9	9	0.150	0.33	0.29	0.13	0.46	0.41	0.18

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBJ Series



CWR11 - MIL-PRF-55365/8 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/8							Typical Ripple Data by Rating								
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
CWR11 P/N	AVX COTS-Plus P/N	AVX SRC9000 P/N	Case																
CWR11K^106^@+□	TBJ D 106 * 025 C □ # @ 0 ^ ++	TBJ D 106 * 025 C □ L @ 9 ^ ++	D	10	25	1.2	2.5	25	30	6	8	9	0.150	0.35	0.32	0.14	0.42	0.38	0.17
CWR11K^156^@+□	TBJ D 156 * 025 C □ # @ 0 ^ ++	TBJ D 156 * 025 C □ L @ 9 ^ ++	D	15	25	1	3.8	38	45.6	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
CWR11M^104^@+□	TBJ A 104 * 035 C □ # @ 0 ^ ++	TBJ A 104 * 035 C □ L @ 9 ^ ++	A	0.1	35	24	0.5	5	6	4	6	6	0.075	0.06	0.05	0.02	1.34	1.21	0.54
CWR11M^154^@+□	TBJ A 154 * 035 C □ # @ 0 ^ ++	TBJ A 154 * 035 C □ L @ 9 ^ ++	A	0.15	35	21	0.5	5	6	4	6	6	0.075	0.06	0.05	0.02	1.25	1.13	0.50
CWR11M^224^@+□	TBJ A 224 * 035 C □ # @ 0 ^ ++	TBJ A 224 * 035 C □ L @ 9 ^ ++	A	0.22	35	18	0.5	5	6	4	6	6	0.075	0.06	0.06	0.03	1.16	1.05	0.46
CWR11M^334^@+□	TBJ A 334 * 035 C □ # @ 0 ^ ++	TBJ A 334 * 035 C □ L @ 9 ^ ++	A	0.33	35	15	0.5	5	6	4	6	6	0.075	0.07	0.06	0.03	1.06	0.95	0.42
CWR11M^474^@+□	TBJ B 474 * 035 C □ # @ 0 ^ ++	TBJ B 474 * 035 C □ L @ 9 ^ ++	B	0.47	35	10	0.5	5	6	4	6	6	0.085	0.09	0.08	0.04	0.92	0.83	0.37
CWR11M^684^@+□	TBJ B 684 * 035 C □ # @ 0 ^ ++	TBJ B 684 * 035 C □ L @ 9 ^ ++	B	0.68	35	8	0.5	5	6	4	6	6	0.085	0.10	0.09	0.04	0.82	0.74	0.33
CWR11M^105^@+□	TBJ B 105 * 035 C □ # @ 0 ^ ++	TBJ B 105 * 035 C □ L @ 9 ^ ++	B	1	35	6.5	0.5	5	6	4	6	6	0.085	0.11	0.10	0.05	0.74	0.67	0.30
CWR11M^155^@+□	TBJ C 155 * 035 C □ # @ 0 ^ ++	TBJ C 155 * 035 C □ L @ 9 ^ ++	C	1.5	35	4.5	0.5	5	6	6	8	9	0.110	0.16	0.14	0.06	0.70	0.63	0.28
CWR11M^225^@+□	TBJ C 225 * 035 C □ # @ 0 ^ ++	TBJ C 225 * 035 C □ L @ 9 ^ ++	C	2.2	35	3.5	0.8	8	9.6	6	8	9	0.110	0.18	0.16	0.07	0.62	0.56	0.25
CWR11M^335^@+□	TBJ C 335 * 035 C □ # @ 0 ^ ++	TBJ C 335 * 035 C □ L @ 9 ^ ++	C	3.3	35	2.5	1.2	12	14.4	6	8	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
CWR11M^475^@+□	TBJ D 475 * 035 C □ # @ 0 ^ ++	TBJ D 475 * 035 C □ L @ 9 ^ ++	D	4.7	35	1.5	1.7	17	20.4	6	8	9	0.150	0.32	0.28	0.13	0.47	0.43	0.19
CWR11M^685^@+□	TBJ D 685 * 035 C □ # @ 0 ^ ++	TBJ D 685 * 035 C □ L @ 9 ^ ++	D	6.8	35	1.3	2.4	24	28.8	6	9	9	0.150	0.34	0.31	0.14	0.44	0.40	0.18
CWR11N^104^@+□	TBJ A 104 * 050 C □ # @ 0 ^ ++	TBJ A 104 * 050 C □ L @ 9 ^ ++	A	0.1	50	22	0.5	5	12	6	8	8	0.075	0.06	0.05	0.02	1.28	1.16	0.51
CWR11N^154^@+□	TBJ B 154 * 050 C □ # @ 0 ^ ++	TBJ B 154 * 050 C □ L @ 9 ^ ++	B	0.15	50	17	0.5	5	6	4	6	6	0.085	0.07	0.06	0.03	1.20	1.08	0.48
CWR11N^224^@+□	TBJ B 224 * 050 C □ # @ 0 ^ ++	TBJ B 224 * 050 C □ L @ 9 ^ ++	B	0.22	50	14	0.5	5	6	4	6	6	0.085	0.08	0.07	0.03	1.09	0.98	0.44
CWR11N^334^@+□	TBJ B 334 * 050 C □ # @ 0 ^ ++	TBJ B 334 * 050 C □ L @ 9 ^ ++	B	0.33	50	12	0.5	5	6	4	6	6	0.085	0.08	0.08	0.03	1.01	0.91	0.40
CWR11N^474^@+□	TBJ C 474 * 050 C □ # @ 0 ^ ++	TBJ C 474 * 050 C □ L @ 9 ^ ++	C	0.47	50	8	0.5	5	6	4	6	6	0.110	0.12	0.11	0.05	0.94	0.84	0.38
CWR11N^684^@+□	TBJ C 684 * 050 C □ # @ 0 ^ ++	TBJ C 684 * 050 C □ L @ 9 ^ ++	C	0.68	50	7	0.5	5	6	4	6	6	0.110	0.13	0.11	0.05	0.88	0.79	0.35
CWR11N^105^@+□	TBJ C 105 * 050 C □ # @ 0 ^ ++	TBJ C 105 * 050 C □ L @ 9 ^ ++	C	1	50	6	0.5	5	6	4	6	6	0.110	0.14	0.12	0.05	0.81	0.73	0.32
CWR11N^155^@+□	TBJ D 155 * 050 C □ # @ 0 ^ ++	TBJ D 155 * 050 C □ L @ 9 ^ ++	D	1.5	50	4	0.8	8	9.6	6	8	9	0.150	0.19	0.17	0.08	0.77	0.70	0.31
CWR11N^225^@+□	TBJ D 225 * 050 C □ # @ 0 ^ ++	TBJ D 225 * 050 C □ L @ 9 ^ ++	D	2.2	50	2.5	1.1	11	13.2	6	8	9	0.150	0.24	0.22	0.10	0.61	0.55	0.24
CWR11N^335^@+□	TBJ D 335 * 050 C □ # @ 0 ^ ++	TBJ D 335 * 050 C □ L @ 9 ^ ++	D	3.3	50	2	1.7	17	20.4	6	9	9	0.150	0.27	0.25	0.11	0.55	0.49	0.22
CWR11N^475^@+□	TBJ D 475 * 050 C □ # @ 0 ^ ++	TBJ D 475 * 050 C □ L @ 9 ^ ++	D	4.7	50	1.5	2.4	24	28.8	6	9	9	0.150	0.32	0.28	0.13	0.47	0.43	0.19

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBJ Series



COTS-Plus – DSCC Dwgs 07016 & 95158 Weibull Grade & Space Level



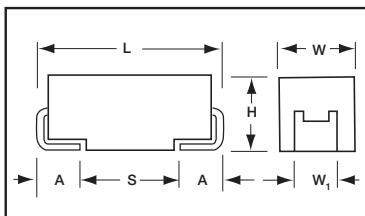
TBJ COTS-Plus series, based on the CWR11 form factor, is a high reliability series encompassing the current range of EIA Low ESR ratings. Qualifications include DSCC 95158 and DSCC 07016, the latter having the widest range of case sizes, capacitance / voltage ratings and also offering Weibull Grade “B” and “C” reliability and all MIL-PRF-55365 surge test options (“A”, “B” & “C”).

For Space Level applications, AVX SRC 9000 qualification is recommended (see

ratings table for part number availability).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these correspond to “H”, “K”, “C” and “B” termination, respectively, per MIL-PRF-55365).

The molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of NASA SP-R-0022A.



MARKING

(Brown marking on gold body)



Polarity Stripe (+)
Capacitance Code
Rated Voltage
Manufacturer's ID
Lot Number

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	1206	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	1210	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	2312	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	2917	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	2924	7361-38	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.

CAPACITANCE AND RATED VOLTAGE, V_R (EIA VOLTAGE CODE) RANGE LETTER DENOTES CASE SIZE (ESR LIMITS IN PARENTHESES)

Capacitance		Rated Voltage DC (V _R) to 85°C							
µF	Code	4V (G)	6V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.15	154								A(15000)
0.22	224								A(18000)
0.47	474							A(12000)	A(9500)/B(9500)
0.68	684						A(10000)	A(8000)	A(7900)
1.0	105						A(8000)	A(7500)	A(6600)/B(7000)
1.5	155					A(6500)	A(3000,7500)	A(7500)/B(5200)	C(2000)/D(1500)
2.2	225				A(5500)	A(3000)	A(7000)/B(2000)	B(2000)	D(1200)
3.3	335		A(8000)		A(3500,5000)		B(2000)	B(1000)	D(800)
4.7	475		A(6000)	A(5000)	A(2000)	A(1800,4000) B(1000)	A(3100) B(700,1500)	B(1500) C(600)/D(450)	D(300) E(300)
6.8	685		A(5000)	A(4000)	A(1500)/B(1200)	B(1000)	B(700,2800) C(200)	C(350)/D(400) E(300)	D(300,600) E(400)
10	106		A(4000)	A(1800,3000)	A(3000)/B(900)	B(500,1000) C(700)	C(300,500)	C(1600)/D(125,300) E(250)	E(400)
15	156		A(3500)	A(1000,3200) B(600)	B(500,800)	B(500)/C(450) D(275)	D(275)/E(200)	C(450)/D(100,300) E(250)	E(250)
22	226		A(3000)/B(600)	B(500,700) C(300)	B(600)/C(175,375) B(500)	B(600)/C(400) D(275)	C(275,400) D(100,200)/E(225)	D(400)/D(125) E(125,300)	
33	336	A(3000)	B(600)	A(700)/B(425,650) C(500)	C(100,300) D(250)	C(300) D(100,200)	D(90,300) E(90,175)	D(200,300) E(300)	
47	476		C(300)	C(200,350) D(200)	C(110,350) D(80,150)	D(100,200) E(150)	D(175,250)	E(250)/V(200)	
68	686	A(1500)	B(500)/C(200) D(175)	C(80,300) D(150)/E(150)	D(150)	D(70,200) E(125,200)	V(95)		
100	107	A(1400) B(900)	C(75,150)	C(75,200) D(50,100)/E(100)	D(50,125) E(100)	V(60)			
150	157		D(125)/E(125)	D(50,100)/E(100)	D(60,150)/V(45)				
220	227		D(50,125) E(100)	D(50,150) E(50,100)	V(50)				
330	337		E(60,150)	D(50,150) E(50,100)/V(40)					
470	477		E(50,200)/V(40)	E(50,200)/V(40)					
1000	108	E(200)							

NOTE: EIA standards for Low ESR solid tantalum capacitors allow an ESR movement of 1.25 times initial limit post mounting.



HOW TO ORDER

COTS-PLUS & DSCC DWG (95158 & 07016):

TBJ	D	686	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A D = DSCC DWG	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

DSCC DWG P/N CROSS REFERENCE:

07016 DSCC DWG 07016	-001 Dash Number See Rating Tables	K Capacitance Tolerance K = ±10% M = ±20%	B Reliability Grade B = B Weibull C = C Weibull D = D Weibull	C Termination Finish B = Gold Plated (10 microinch minimum) H = Solder Plated (50 microinch minimum) C = Hot Solder Dip (60 microinch minimum)	A Surge Test Option A = 10 cycles, +25°C B = 10 cycles, -55°C & +85°C C = 10 cycles, -55°C & +85°C before Weibull Z = None required Per MIL-PRF-55365
95158 DSCC DWG 95158	-01 Dash Number See Rating Tables	K Capacitance Tolerance K = ±10% M = ±20%	H Termination Finish B = Gold Plated (10 microinch minimum) H = Solder Plated (100 microinch minimum)		

SPACE LEVEL OPTIONS TO SRC9000*:

TBJ	D	686	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	0.1 μF to 1000 μF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage: (V _R)	≤85°C:	4	6	10	16	20	25	35	50	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	32	46	65	
	125°C:	3.4	5	8	12	16	20	28	40	
Temperature Range:	-55°C to +125°C									

TBJ Series



COTS-Plus – DSCC Dwgs 07016 & 95158 Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per DSCC 95158 or 07016 where applicable									Typical Ripple Data by Rating						
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
DSCC P/N	AVX DSCC & COTS-Plus P/N	AVX SRC9000 P/N	Case	µF @ 25°C	V @ +85°C	mOhms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
07016 001 * @ +	TBJ A 336 * 004 C □ # @ 0 +		A	33	4	3000	1.4	14	18	6	9	9	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 002 * @ +	TBJ A 686 * 004 C □ # @ 0 +		A	68	4	1500	2.7	27	34	10	12	14	0.075	0.22	0.20	0.09	0.34	0.30	0.13
07016 003 * @ +	TBJ A 107 * 004 C □ # @ 0 +		A	100	4	1400	4	40	50	30	36	42	0.075	0.23	0.21	0.09	0.32	0.29	0.13
07016 004 * @ +	TBJ B 107 * 004 C □ # @ 0 +		B	100	4	900	4	40	50	8	10	12	0.085	0.31	0.28	0.12	0.28	0.25	0.11
07016 005 * @ +	TBJ E 108 * 004 C □ # @ 0 +		E	1,000	4	200	40	400	500	60	90	90	0.165	0.91	0.82	0.36	0.18	0.16	0.07
07016 006 * @ +	TBJ A 335 * 006 C □ # @ 0 +		A	3.3	6	8000	0.5	5	6	6	9	9	0.075	0.10	0.09	0.04	0.77	0.70	0.31
07016 007 * @ +	TBJ A 475 * 006 C □ # @ 0 +		A	4.7	6	6000	0.5	5	6	6	9	10	0.075	0.11	0.10	0.04	0.67	0.60	0.27
07016 008 * @ +	TBJ A 685 * 006 C □ # @ 0 +		A	6.8	6	5000	0.5	5	6	6	9	10	0.075	0.12	0.11	0.05	0.61	0.55	0.24
07016 009 * @ +	TBJ A 106 * 006 C □ # @ 0 +	TBJ A 106 * 006 C □ L @ 9 +	A	10	6	4000	1	10	13	6	9	10	0.075	0.14	0.12	0.05	0.55	0.49	0.22
07016 010 * @ +	TBJ A 156 * 006 C □ # @ 0 +	TBJ A 156 * 006 C □ L @ 9 +	A	15	6	3500	1	10	13	6	9	10	0.075	0.15	0.13	0.06	0.51	0.46	0.20
07016 011 * @ +	TBJ A 226 * 006 C □ # @ 0 +	TBJ A 226 * 006 C □ L @ 9 +	A	22	6	3000	1.4	14	18	6	9	10	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 012 * @ +	TBJ B 226 * 006 C □ # @ 0 +	TBJ B 226 * 006 C □ L @ 9 +	B	22	6	600	1.4	14	18	6	9	10	0.085	0.38	0.34	0.15	0.23	0.20	0.09
07016 013 * @ +	TBJ B 336 * 006 C □ # @ 0 +	TBJ B 336 * 006 C □ L @ 9 +	B	33	6	600	2.1	21	26	6	9	10	0.085	0.38	0.34	0.15	0.23	0.20	0.09
07016 014 * @ +	TBJ C 476 * 006 C □ # @ 0 +	TBJ C 476 * 006 C □ L @ 9 +	C	47	6	300	3	30	38	6	9	10	0.110	0.61	0.54	0.24	0.18	0.16	0.07
07016 015 * @ +	TBJ B 686 * 006 C □ # @ 0 +		B	68	6	500	4.3	43	54	8	10	12	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 016 * @ +	TBJ C 686 * 006 C □ # @ 0 +	TBJ C 686 * 006 C □ L @ 9 +	C	68	6	200	4.3	43	54	6	9	10	0.110	0.74	0.67	0.30	0.15	0.13	0.06
95158 01 * ^	TBJ D 686 * 006 C □ # @ 0 +		D	68	6	175	3.3	19.8	33	4	6	6	0.150	0.93	0.83	0.37	0.16	0.15	0.06
07016 017 * @ +	TBJ C 107 * 006 C □ # @ 0 +		C	100	6	150	6.3	63	79	6	9	10	0.110	0.86	0.77	0.34	0.13	0.12	0.05
07016 018 * @ +	TBJ C 107 * 006 L □ # @ 0 +		C	100	6	75	6.3	63	79	6	9	10	0.110	1.21	1.09	0.48	0.09	0.08	0.04
07016 019 * @ +	TBJ D 157 * 006 C □ # @ 0 +	TBJ D 157 * 006 C □ L @ 9 +	D	150	6	125	9.5	95	119	6	9	10	0.150	1.10	0.99	0.44	0.14	0.12	0.05
95158 02 * ^	TBJ E 157 * 006 C □ # @ 0 +		E	150	6	125	7.2	43.2	72	6	8	8	0.165	1.15	1.03	0.46	0.14	0.13	0.06
07016 020 * @ +	TBJ D 227 * 006 C □ # @ 0 +	TBJ D 227 * 006 C □ L @ 9 +	D	220	6	125	13.2	132	165	8	10	12	0.150	1.10	0.99	0.44	0.14	0.12	0.05
95158 25 * ^	TBJ D 227 * 006 L □ # @ 0 +		D	220	6	50	13.2	132	165	8	10	12	0.150	1.73	1.56	0.69	0.09	0.08	0.03
95158 03 * ^	TBJ E 227 * 006 L □ # @ 0 +		E	220	6	100	13.2	132	165	8	12	12	0.165	1.28	1.16	0.51	0.13	0.12	0.05
07016 021 * @ +	TBJ E 337 * 006 C □ # @ 0 +	TBJ E 337 * 006 C □ L @ 9 +	E	330	6	150	19.8	198	248	8	10	12	0.165	1.05	0.94	0.42	0.16	0.14	0.06
07016 022 * @ +	TBJ E 337 * 006 L □ # @ 0 +		E	330	6	50	19.8	198	248	8	10	12	0.165	1.82	1.63	0.73	0.09	0.08	0.04
07016 023 M @ +	TBJ E 477 * 006 C □ # @ 0 +	TBJ E 477 ^ 006 C □ L @ 9 +	E	470	6	200	29.6	296	370	10	12	14	0.165	0.91	0.82	0.36	0.18	0.16	0.07
07016 024 M @ +	TBJ E 477 M 006 L □ # @ 0 +		E	470	6	50	29.6	296	370	10	12	14	0.165	1.82	1.63	0.73	0.09	0.08	0.04
07016 025 * @ +	TBJ V 477 * 006 L □ # @ 0 +		V	470	6	40	29.6	296	370	10	12	12	0.250	2.50	2.25	1.00	0.10	0.09	0.04
07016 026 * @ +	TBJ A 475 * 010 C □ # @ 0 +	TBJ A 475 * 010 C □ L @ 9 +	A	4.7	10	5000	0.5	5	6	6	9	10	0.075	0.12	0.11	0.05	0.61	0.55	0.24
07016 027 * @ +	TBJ A 685 * 010 C □ # @ 0 +	TBJ A 685 * 010 C □ L @ 9 +	A	6.8	10	4000	0.7	7	9	6	9	10	0.075	0.14	0.12	0.05	0.55	0.49	0.22
07016 028 * @ +	TBJ A 106 * 010 C □ # @ 0 +	TBJ A 106 * 010 C □ L @ 9 +	A	10	10	3000	1	10	13	6	9	10	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 029 * @ +	TBJ A 106 * 010 L □ # @ 0 +	TBJ A 106 * 010 L □ L @ 9 +	A	10	10	1800	1	10	13	6	9	10	0.075	0.20	0.18	0.08	0.37	0.33	0.15
07016 030 * @ +	TBJ A 156 * 010 C □ # @ 0 +	TBJ A 156 * 010 C □ L @ 9 +	A	15	10	3200	1.6	16	20	6	9	10	0.075	0.15	0.14	0.06	0.49	0.44	0.20
07016 031 * @ +	TBJ A 156 * 010 L □ # @ 0 +	TBJ A 156 * 010 L □ L @ 9 +	A	15	10	1000	1.6	16	20	6	9	10	0.075	0.27	0.25	0.11	0.27	0.25	0.11
07016 032 * @ +	TBJ B 156 * 010 C □ # @ 0 +	TBJ B 156 * 010 C □ L @ 9 +	B	15	10	600	1.6	16	20	6	9	10	0.085	0.38	0.34	0.15	0.23	0.20	0.09
07016 033 * @ +	TBJ B 226 * 010 C □ # @ 0 +	TBJ B 226 * 010 C □ L @ 9 +	B	22	10	700	2.2	22	28	6	9	10	0.085	0.35	0.31	0.14	0.24	0.22	0.10
07016 034 * @ +	TBJ B 226 * 010 L □ # @ 0 +		B	22	10	500	2.2	22	28	6	9	10	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 035 * @ +	TBJ C 226 * 010 C □ # @ 0 +		C	22	10	300	2.2	22	28	6	9	10	0.110	0.61	0.54	0.24	0.18	0.16	0.07
07016 036 * @ +	TBJ A 336 * 010 C □ # @ 0 +		A	33	10	700	3.3	33	41	8	10	12	0.075	0.33	0.29	0.13	0.23	0.21	0.09
07016 037 * @ +	TBJ B 336 * 010 C □ # @ 0 +	TBJ B 336 * 010 C □ L @ 9 +	B	33	10	650	3.3	33	41	6	9	10	0.085	0.36	0.33	0.14	0.24	0.21	0.09
07016 038 * @ +	TBJ B 336 * 010 L □ # @ 0 +		B	33	10	425	3.3	33	41	6	9	10	0.085	0.45	0.40	0.18	0.19	0.17	0.08
07016 039 * @ +	TBJ C 336 * 010 C □ # @ 0 +	TBJ C 336 * 010 C □ L @ 9 +	C	33	10	500	3.3	33	41	6	9	10	0.110	0.47	0.42	0.19	0.23	0.21	0.09
07016 040 * @ +	TBJ C 476 * 010 C □ # @ 0 +	TBJ C 476 * 010 C □ L @ 9 +	C	47	10	350	4.7	47	59	6	9	10	0.110	0.56	0.50	0.22	0.20	0.18	0.08
07016 041 * @ +	TBJ C 476 * 010 L □ # @ 0 +		C	47	10	200	4.7	47	59	6	9	10	0.110	0.74	0.67	0.30	0.15	0.13	0.06
95158 -04 * ^	TBJ D 476 * 010 C □ # @ 0 +		D	47	10	200	3.8	22.8	38	4	6	6	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 042 * @ +	TBJ C 686 * 010 C □ # @ 0 +	TBJ C 686 * 010 C □ L @ 9 +	C	68	10	300	6.8	68	85	8	10	12	0.110	0.61	0.54	0.24	0.18	0.16	0.07
07016 043 * @ +	TBJ C 686 * 010 L □ # @ 0 +		C	68	10	80	6.8	68	85	8	10	12	0.110	1.17	1.06	0.47	0.09	0.08	0.04
07016 044 * @ +	TBJ D 686 * 010 C □ # @ 0 +		D	68	10	150	6.8	68	85	6	9	10	0.150	1.00	0.90	0.40	0.15	0.14	0.06
95158 05 * ^	TBJ E 686 * 010 C □ # @ 0 +		E	68	10	150	5.4	32.4	54	4	6	6	0.165	1.05	0.94	0.42	0.16	0.14	0.06
07016 045 * @ +	TBJ C 107 * 010 C □ # @ 0 +	TBJ C 107 * 010 C □ L @ 9 +	C	100	10	200	10	100	125	8	10	12	0.110	0.74	0.67	0.30	0.15	0.13	0.06
07016 046 * @ +	TBJ C 107 * 010 L □ # @ 0 +		C	100	10	75	10	100	125	8	10	12	0.110	1.21	1.09	0.48	0.09	0.08	0.04
95158 06 * ^	TBJ D 107 * 010 C □ # @ 0 +	TBJ D 107 * 010 C □ L @ 9 +	D	100	10	100	10	100	125	6	9	10	0.150	1.22	1.10	0.49	0.12	0.11	0.05
07016 047 * @ +	TBJ D 107 * 010 L □ # @ 0 +		D	100	10	50	10	100	125	6	9	10	0.150	1.73	1.56	0.69	0.09	0.08	0.03
95158 07 * ^	TBJ E 107 * 010 C □ # @ 0 +		E	100	10	100	8	48	80	6	8	8	0.165	1.28	1.16	0.51	0.13	0.12	0.05

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBJ Series



COTS-Plus – DSCC Dwgs 07016 & 95158 Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per DSCC 95158 or 07016 where applicable									Typical Ripple Data by Rating						
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
DSCC P/N	AVX DSCC & COTS-Plus P/N	AVX SRC9000 P/N	Case	µF @ 25°C	V @ +85°C	mOhms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
95158 26 * ^	TBJ D 157 * 010 C □ # @ 0 ^ ++	TBJ D 157 * 010 C □ L @ 9 ^ ++	D	150	10	100	15	150	188	8	10	12	0.150	1.22	1.10	0.49	0.12	0.11	0.05
07016 048 * @ ^ +	TBJ D 157 * 010 L □ # @ 0 ^ ++		D	150	10	50	15	150	188	8	10	12	0.150	1.73	1.56	0.69	0.09	0.08	0.03
95158 08 * ^	TBJ E 157 * 010 C □ # @ 0 ^ ++	TBJ E 157 * 010 C □ L @ 9 ^ ++	E	150	10	100	15	150	187.5	8	12	12	0.165	1.28	1.16	0.51	0.13	0.12	0.05
07016 049 * @ ^ +	TBJ D 227 M 010 C □ # @ 0 ^ ++		D	220	10	150	22	220	275	8	10	12	0.150	1.00	0.90	0.40	0.15	0.14	0.06
07016 050 M @ ^ +	TBJ D 227 M 010 L □ # @ 0 ^ ++		D	220	10	50	15	150	188	8	10	12	0.150	1.73	1.56	0.69	0.09	0.08	0.03
95158 28 * ^	TBJ E 227 * 010 C □ # @ 0 ^ ++	TBJ E 227 * 010 C □ L @ 9 ^ ++	E	220	10	100	15	150	188	8	10	12	0.165	1.28	1.16	0.51	0.13	0.12	0.05
07016 051 * @ ^ +	TBJ E 227 * 010 L □ # @ 0 ^ ++		E	220	10	50	22	220	275	8	10	12	0.165	1.82	1.63	0.73	0.09	0.08	0.04
07016 052 M @ ^ +	TBJ D 337 M 010 C □ # @ 0 ^ ++		D	330	10	150	33	330	413	8	10	12	0.150	1.00	0.90	0.40	0.15	0.14	0.06
07016 053 M @ ^ +	TBJ D 337 M 010 L □ # @ 0 ^ ++		D	330	10	50	33	330	413	8	10	12	0.150	1.73	1.56	0.69	0.09	0.08	0.03
07016 054 * @ ^ +	TBJ E 337 * 010 C □ # @ 0 ^ ++	TBJ E 337 * 010 C □ L @ 9 ^ ++	E	330	10	100	33	330	413	8	10	12	0.165	1.28	1.16	0.51	0.13	0.12	0.05
07016 055 * @ ^ +	TBJ E 337 * 010 L □ # @ 0 ^ ++		E	330	10	50	33	330	413	8	10	12	0.165	1.82	1.63	0.73	0.09	0.08	0.04
07016 056 * @ ^ +	TBJ V 337 * 010 L □ # @ 0 ^ ++		V	330	10	40	33	330	413	8	10	12	0.250	2.50	2.25	1.00	0.10	0.09	0.04
07016 057 M @ ^ +	TBJ E 477 M 010 C □ # @ 0 ^ ++		E	470	10	200	47	470	588	10	12	14	0.165	0.91	0.82	0.36	0.18	0.16	0.07
07016 058 M @ ^ +	TBJ E 477 M 010 L □ # @ 0 ^ ++		E	470	10	50	47	470	588	10	12	14	0.165	1.82	1.63	0.73	0.09	0.08	0.04
07016 059 * @ ^ +	TBJ V 477 * 010 L □ # @ 0 ^ ++		V	470	10	40	47	470	588	10	12	14	0.250	2.50	2.25	1.00	0.10	0.09	0.04
07016 060 * @ ^ +	TBJ A 225 * 016 C □ # @ 0 ^ ++	TBJ A 225 * 016 C □ L @ 9 ^ ++	A	2.2	16	5500	0.5	5	6	6	9	10	0.075	0.12	0.11	0.05	0.64	0.58	0.26
07016 061 * @ ^ +	TBJ A 335 * 016 C □ # @ 0 ^ ++	TBJ A 335 * 016 C □ L @ 9 ^ ++	A	3.3	16	5000	0.5	5	6	6	9	10	0.075	0.12	0.11	0.05	0.61	0.55	0.24
07016 062 * @ ^ +	TBJ A 335 * 016 L □ # @ 0 ^ ++	TBJ A 335 * 016 L □ L @ 9 ^ ++	A	3.3	16	3500	0.5	5	6	6	9	10	0.075	0.15	0.13	0.06	0.51	0.46	0.20
07016 063 * @ ^ +	TBJ A 475 * 016 C □ # @ 0 ^ ++	TBJ A 475 * 016 C □ L @ 9 ^ ++	A	4.7	16	2000	0.8	8	10	6	9	10	0.075	0.19	0.17	0.08	0.39	0.35	0.15
07016 064 * @ ^ +	TBJ A 685 * 016 C □ # @ 0 ^ ++	TBJ A 685 * 016 C □ L @ 9 ^ ++	A	6.8	16	1500	1.1	11	14	6	9	10	0.075	0.22	0.20	0.09	0.34	0.30	0.13
07016 065 * @ ^ +	TBJ B 685 * 016 C □ # @ 0 ^ ++	TBJ B 685 * 016 C □ L @ 9 ^ ++	B	6.8	16	1200	1.1	11	14	6	9	10	0.085	0.27	0.24	0.11	0.32	0.29	0.13
07016 066 * @ ^ +	TBJ A 106 * 016 C □ # @ 0 ^ ++		A	10	16	3000	1.6	16	20	6	9	10	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 068 * @ ^ +	TBJ B 156 * 016 C □ # @ 0 ^ ++	TBJ B 156 * 016 C □ L @ 9 ^ ++	B	15	16	800	2.4	24	30	6	9	10	0.085	0.33	0.29	0.13	0.26	0.23	0.10
07016 069 * @ ^ +	TBJ B 156 * 016 L □ # @ 0 ^ ++		B	15	16	500	2.4	24	30	6	9	10	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 070 * @ ^ +	TBJ B 226 * 016 C □ # @ 0 ^ ++	TBJ B 226 * 016 C □ L @ 9 ^ ++	B	22	16	600	3.6	36	45	6	9	10	0.085	0.38	0.34	0.15	0.23	0.20	0.09
07016 071 * @ ^ +	TBJ C 226 * 016 C □ # @ 0 ^ ++	TBJ C 226 * 016 C □ L @ 9 ^ ++	C	22	16	375	3.6	36	45	6	9	10	0.110	0.54	0.49	0.22	0.20	0.18	0.08
07016 072 * @ ^ +	TBJ C 226 * 016 L □ # @ 0 ^ ++		C	22	16	150	3.6	36	45	6	9	10	0.110	0.86	0.77	0.34	0.13	0.12	0.05
07016 073 * @ ^ +	TBJ B 336 * 016 C □ # @ 0 ^ ++		B	22	16	500	3.6	36	45	6	9	10	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 074 * @ ^ +	TBJ C 336 * 016 C □ # @ 0 ^ ++	TBJ C 336 * 016 C □ L @ 9 ^ ++	C	33	16	300	5.3	53	66	6	9	10	0.110	0.61	0.54	0.24	0.18	0.16	0.07
07016 075 * @ ^ +	TBJ C 336 * 016 L □ # @ 0 ^ ++		C	33	16	100	5.3	53	66	6	9	10	0.110	1.05	0.94	0.42	0.10	0.09	0.04
95158 09 * ^	TBJ D 336 * 016 C □ # @ 0 ^ ++		D	33	16	250	4.2	25.2	42	4	6	6	0.150	0.77	0.70	0.31	0.19	0.17	0.08
07016 076 * @ ^ +	TBJ C 476 * 016 C □ # @ 0 ^ ++	TBJ C 476 * 016 C □ L @ 9 ^ ++	C	47	16	350	7.6	76	95	6	9	10	0.110	0.56	0.50	0.22	0.20	0.18	0.08
07016 077 * @ ^ +	TBJ C 476 * 016 L □ # @ 0 ^ ++		C	47	16	110	7.6	76	95	6	9	10	0.110	1.00	0.90	0.40	0.11	0.10	0.04
07016 078 * @ ^ +	TBJ D 476 * 016 L □ # @ 0 ^ ++		D	47	16	80	7.6	76	95	6	9	10	0.150	1.37	1.23	0.55	0.11	0.10	0.04
95158 10 * ^	TBJ D 476 * 016 C □ # @ 0 ^ ++	TBJ D 476 * 016 C □ L @ 9 ^ ++	D	47	16	150	7.5	75	94	6	9	9	0.150	1.00	0.90	0.40	0.15	0.14	0.06
07016 079 * @ ^ +	TBJ D 686 * 016 C □ # @ 0 ^ ++	TBJ D 686 * 016 C □ L @ 9 ^ ++	D	68	16	150	10.9	109	136	6	9	10	0.150	1.00	0.90	0.40	0.15	0.14	0.06
07016 080 * @ ^ +	TBJ D 107 * 016 C □ # @ 0 ^ ++	TBJ D 107 * 016 C □ L @ 9 ^ ++	D	100	16	125	16	160	200	6	9	10	0.150	1.10	0.99	0.44	0.14	0.12	0.05
07016 081 * @ ^ +	TBJ D 107 * 016 L □ # @ 0 ^ ++		D	100	16	50	16	160	200	6	9	10	0.150	1.73	1.56	0.69	0.09	0.08	0.03
95158 11 * ^	TBJ E 107 * 016 C □ # @ 0 ^ ++	TBJ E 107 * 016 C □ L @ 9 ^ ++	E	100	16	100	16	160	200	6	9	10	0.165	1.28	1.16	0.51	0.13	0.12	0.05
07016 082 M @ ^ +	TBJ D 157 M 016 C □ # @ 0 ^ ++		D	150	16	150	24	240	300	6	9	10	0.150	1.00	0.90	0.40	0.15	0.14	0.06
07016 083 M @ ^ +	TBJ D 157 M 016 L □ # @ 0 ^ ++		D	150	16	60	24	240	300	6	9	10	0.150	1.58	1.42	0.63	0.09	0.09	0.04
07016 084 * @ ^ +	TBJ V 157 * 016 L □ # @ 0 ^ ++		V	150	16	45	24	480	300	6	8	10	0.250	2.36	2.12	0.94	0.11	0.10	0.04
07016 085 * @ ^ +	TBJ V 227 * 016 L □ # @ 0 ^ ++		V	220	16	50	35.2	352	440	8	10	12	0.250	2.24	2.01	0.89	0.11	0.10	0.04
07016 086 * @ ^ +	TBJ A 155 * 020 C □ # @ 0 ^ ++	TBJ A 155 * 020 C □ L @ 9 ^ ++	A	1.5	20	6500	0.5	5	6	6	8	10	0.075	0.11	0.10	0.04	0.70	0.63	0.28
07016 087 * @ ^ +	TBJ A 225 * 020 C □ # @ 0 ^ ++	TBJ A 225 * 020 C □ L @ 9 ^ ++	A	2.2	20	3000	0.5	5	6	6	8	10	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 088 * @ ^ +	TBJ A 475 * 020 C □ # @ 0 ^ ++	TBJ A 475 * 020 C □ L @ 9 ^ ++	A	4.7	20	4000	1	10	13	6	8	10	0.075	0.14	0.12	0.05	0.55	0.49	0.22
07016 089 * @ ^ +	TBJ A 475 * 020 L □ # @ 0 ^ ++	TBJ A 475 * 020 L □ L @ 9 ^ ++	A	4.7	20	1800	1	10	13	6	8	10	0.075	0.20	0.18	0.08	0.37	0.33	0.15
07016 090 * @ ^ +	TBJ B 475 * 020 C □ # @ 0 ^ ++	TBJ B 475 * 020 C □ L @ 9 ^ ++	B	4.7	20	1000	2	20	25	6	8	10	0.085	0.29	0.26	0.12	0.29	0.26	0.12
07016 091 * @ ^ +	TBJ B 685 * 020 C □ # @ 0 ^ ++	TBJ B 685 * 020 C □ L @ 9 ^ ++	B	6.8	20	1000	1.4	14	18	6	8	10	0.085	0.29	0.26	0.12	0.29	0.26	0.12
07016 092 * @ ^ +	TBJ B 106 * 020 C □ # @ 0 ^ ++	TBJ B 106 * 020 C □ L @ 9 ^ ++	B	10	20	1000	0.7	7	9	6	8	10	0.085	0.29	0.26	0.12	0.29	0.26	0.12
07016 093 * @ ^ +	TBJ B 106 * 020 L □ # @ 0 ^ ++		B	10	20	500	0.7	7	9	6	8	10	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 094 * @ ^ +	TBJ C 106 * 020 C □ # @ 0 ^ ++	TBJ C 106 * 020 C □ L @ 9 ^ ++	C	10	20	700	1.4	14	18	6	8	10	0.110	0.40	0.36	0.16	0.28	0.25	0.11
07016 095 * @ ^ +	TBJ B 156 * 020 C □ # @ 0 ^ ++	TBJ B 156 * 020 C □ L @ 9 ^ ++	B	15	20	500	3	30	38	6	8	10	0.085	0.41	0.37	0.16	0.21	0.19	0.08
07016 096 * @ ^ +	TBJ C 156 * 020 C □ # @ 0 ^ ++	TBJ C 156 * 020 C □ L @ 9 ^ ++	C	15	20														

TBJ Series



COTS-Plus – DSCC Dwgs 07016 & 95158 Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per DSCC 95158 or 07016 where applicable							Typical Ripple Data by Rating								
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
DSCC P/N	AVX DSCC & COTS-Plus P/N	AVX SRC9000 P/N	Case	+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)										
07016 097 * @ +	TBJ B 226 * 020 C □ # @ 0 +		B	22	20	600	4.4	44	55	6	8	10	0.085	0.38	0.34	0.23	0.20	0.09	
07016 098 * @ +	TBJ C 226 * 020 C □ # @ 0 +	TBJ C 226 * 020 C □ L @ 9 +	C	22	20	400	4.4	44	55	6	8	10	0.110	0.52	0.47	0.21	0.21	0.19	0.08
95158 13 * ^	TBJ D 226 * 020 C □ # @ 0 +	TBJ D 226 * 020 C □ L @ 9 +	D	22	20	275	3.5	21	35	4	6	6	0.150	0.74	0.66	0.30	0.20	0.18	0.08
07016 099 * @ +	TBJ D 336 * 020 C □ # @ 0 +	TBJ D 336 * 020 C □ L @ 9 +	C	33	20	300	6.6	66	83	6	8	10	0.110	0.61	0.54	0.24	0.18	0.16	0.07
07016 100 * @ +	TBJ D 336 * 020 C □ # @ 0 +	TBJ D 336 * 020 C □ L @ 9 +	D	33	20	200	6.6	66	83	6	8	10	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 101 * @ +	TBJ D 336 * 020 L □ # @ 0 +		D	33	20	100	6.6	66	83	6	8	10	0.150	1.22	1.10	0.49	0.12	0.11	0.05
07016 102 * @ +	TBJ D 476 * 020 C □ # @ 0 +	TBJ D 476 * 020 C □ L @ 9 +	D	47	20	200	9.4	94	118	6	8	10	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 103 * @ +	TBJ D 476 * 020 L □ # @ 0 +		D	47	20	100	9.4	94	118	6	8	10	0.150	1.22	1.10	0.49	0.12	0.11	0.05
95158 14 * ^	TBJ E 476 * 020 C □ # @ 0 +		E	47	20	150	7.5	45	75	4	6	6	0.165	1.05	0.94	0.42	0.16	0.14	0.06
07016 104 * @ +	TBJ D 686 * 020 C □ # @ 0 +	TBJ D 686 * 020 C □ L @ 9 +	D	68	20	200	13.6	136	170	6	8	10	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 105 * @ +	TBJ D 686 * 020 L □ # @ 0 +		D	68	20	70	13.6	136	170	6	8	10	0.150	1.46	1.32	0.59	0.10	0.09	0.04
07016 106 * @ +	TBJ E 686 * 020 C □ # @ 0 +	TBJ E 686 * 020 C □ L @ 9 +	E	68	20	200	13.6	136	170	6	8	10	0.165	0.91	0.82	0.36	0.18	0.16	0.07
95158 15 * ^	TBJ E 686 * 020 L □ # @ 0 +		E	68	20	125	13.6	136	170	6	8	9	0.165	1.15	1.03	0.46	0.14	0.13	0.06
07016 107 * @ +	TBJ V 107 * 020 L □ # @ 0 +		V	100	20	60	20	200	250	8	10	12	0.250	2.04	1.84	0.82	0.12	0.11	0.05
07016 108 M @ +	TBJ A 684 M 025 C □ # @ 0 +	TBJ A 684 M 025 C □ L @ 9 +	A	0.7	25	10000	0.5	5	6	4	6	8	0.075	0.09	0.08	0.03	0.87	0.78	0.35
07016 109 * @ +	TBJ A 105 * 025 C □ # @ 0 +	TBJ A 105 * 025 C □ L @ 9 +	A	1.0	25	8000	0.5	5	6	4	6	8	0.075	0.10	0.09	0.04	0.77	0.70	0.31
07016 110 * @ +	TBJ A 155 * 025 C □ # @ 0 +	TBJ A 155 * 025 C □ L @ 9 +	A	1.5	25	7500	0.5	5	6	6	8	10	0.075	0.10	0.09	0.04	0.75	0.68	0.30
07016 111 * @ +	TBJ A 155 * 025 L □ # @ 0 +	TBJ A 155 * 025 L □ L @ 9 +	A	1.5	25	3000	0.5	5	6	6	8	10	0.075	0.16	0.14	0.06	0.47	0.43	0.19
07016 112 * @ +	TBJ A 225 * 025 C □ # @ 0 +	TBJ A 225 * 025 C □ L @ 9 +	A	2.2	25	7000	0.5	5	6	6	8	10	0.075	0.10	0.09	0.04	0.72	0.65	0.29
07016 113 * @ +	TBJ B 225 * 025 C □ # @ 0 +	TBJ B 225 * 025 C □ L @ 9 +	B	2.2	25	2000	0.5	5	6	6	8	10	0.085	0.21	0.19	0.08	0.41	0.37	0.16
07016 114 * @ +	TBJ B 335 * 025 C □ # @ 0 +	TBJ B 335 * 025 C □ L @ 9 +	B	3.3	25	2000	0.5	5	6	6	8	10	0.085	0.21	0.19	0.08	0.41	0.37	0.16
07016 115 * @ +	TBJ A 475 * 025 C □ # @ 0 +		A	4.7	25	3100	1.2	12	15	6	9	10	0.075	0.16	0.14	0.06	0.48	0.43	0.19
07016 116 * @ +	TBJ B 475 * 025 C □ # @ 0 +	TBJ B 475 * 025 C □ L @ 9 +	B	4.7	25	1500	1.2	12	15	6	8	10	0.085	0.24	0.21	0.10	0.36	0.32	0.14
07016 117 * @ +	TBJ B 475 * 025 L □ # @ 0 +		B	4.7	25	700	1.2	12	15	6	8	10	0.085	0.35	0.31	0.14	0.24	0.22	0.10
07016 118 * @ +	TBJ B 685 * 025 C □ # @ 0 +	TBJ B 685 * 025 C □ L @ 9 +	B	6.8	25	2800	1.7	17	21	6	8	10	0.085	0.17	0.16	0.07	0.49	0.44	0.20
07016 119 * @ +	TBJ B 685 * 025 L □ # @ 0 +		B	6.8	25	700	1.7	17	21	6	8	10	0.085	0.35	0.31	0.14	0.24	0.22	0.10
07016 120 * @ +	TBJ C 685 * 025 C □ # @ 0 +	TBJ C 685 * 025 C □ L @ 9 +	C	6.8	25	700	1.7	17	21	6	8	10	0.110	0.40	0.36	0.16	0.28	0.25	0.11
07016 121 * @ +	TBJ C 106 * 025 C □ # @ 0 +	TBJ C 106 * 025 C □ L @ 9 +	C	10	25	500	2.5	25	31	6	8	10	0.110	0.47	0.42	0.19	0.23	0.21	0.09
07016 122 * @ +	TBJ C 106 * 025 L □ # @ 0 +		C	10	25	300	2.5	25	31	6	8	10	0.110	0.61	0.54	0.24	0.18	0.16	0.07
95158 16 * ^	TBJ D 156 * 025 C □ # @ 0 +	TBJ D 156 * 025 C □ L @ 9 +	D	15	25	275	3.8	38	45.6	6	9	9	0.150	0.74	0.66	0.30	0.20	0.18	0.08
95158 17 * ^	TBJ E 156 * 025 C □ # @ 0 +		E	15	25	200	3	18	30	4	6	6	0.165	0.91	0.82	0.36	0.18	0.16	0.07
07016 123 * @ +	TBJ C 226 * 025 C □ # @ 0 +		C	22	25	400	5.5	55	69	6	8	10	0.110	0.52	0.47	0.21	0.21	0.19	0.08
07016 124 * @ +	TBJ C 226 * 025 L □ # @ 0 +		C	22	25	275	5.5	55	69	6	8	10	0.110	0.63	0.57	0.25	0.17	0.16	0.07
07016 125 * @ +	TBJ D 226 * 025 C □ # @ 0 +	TBJ D 226 * 025 C □ L @ 9 +	D	22	25	200	5.5	55	69	6	8	10	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 126 * @ +	TBJ D 226 * 025 L □ # @ 0 +		D	22	25	100	5.5	55	69	6	8	10	0.150	1.22	1.10	0.49	0.12	0.11	0.05
95158 18 * ^	TBJ E 226 * 025 L □ # @ 0 +		E	22	25	225	4.4	26.4	44	4	6	6	0.165	0.86	0.77	0.34	0.19	0.17	0.08
07016 127 * @ +	TBJ D 336 * 025 C □ # @ 0 +	TBJ D 336 * 025 C □ L @ 9 +	D	33	25	300	8.3	83	104	6	8	10	0.150	0.71	0.64	0.28	0.21	0.19	0.08
07016 128 * @ +	TBJ D 336 * 025 L □ # @ 0 +		D	33	25	100	8.3	83	104	6	8	10	0.150	1.22	1.10	0.49	0.12	0.11	0.05
95158 19 * ^	TBJ E 336 * 025 C □ # @ 0 +		E	33	25	175	6.6	39.6	66	4	6	6	0.165	0.97	0.87	0.39	0.17	0.15	0.07
07016 129 * @ +	TBJ E 336 * 025 L □ # @ 0 +		E	33	25	100	8.3	83	104	6	8	10	0.165	1.35	1.22	0.54	0.12	0.11	0.05
07016 130 M @ +	TBJ D 476 M 025 C □ # @ 0 +		D	47	25	250	11.8	118	148	6	8	10	0.150	0.77	0.70	0.31	0.19	0.17	0.08
07016 131 M @ +	TBJ D 476 M 025 L □ # @ 0 +		D	47	25	175	11.8	118	148	6	8	10	0.150	0.93	0.83	0.37	0.16	0.15	0.06
07016 132 * @ +	TBJ V 686 * 025 L □ # @ 0 +		V	68	25	95	17	170	213	8	10	12	0.250	1.62	1.46	0.65	0.15	0.14	0.06
07016 133 M @ +	TBJ A 474 M 035 C □ # @ 0 +	TBJ A 474 M 035 C □ L @ 9 +	A	0.47	35	12000	0.5	5	6	4	6	8	0.075	0.08	0.07	0.03	0.95	0.85	0.38
07016 134 M @ +	TBJ A 684 M 035 C □ # @ 0 +	TBJ A 684 M 035 C □ L @ 9 +	A	0.68	35	8000	0.5	5	6	4	6	8	0.075	0.10	0.09	0.04	0.77	0.70	0.31
07016 135 * @ +	TBJ A 105 * 035 C □ # @ 0 +	TBJ A 105 * 035 C □ L @ 9 +	A	1.0	35	7500	0.5	5	6	4	6	6	0.075	0.10	0.09	0.04	0.75	0.68	0.30
07016 136 * @ +	TBJ A 155 * 035 C □ # @ 0 +	TBJ A 155 * 035 C □ L @ 9 +	A	1.5	35	7500	0.5	5	6	6	8	9	0.075	0.10	0.09	0.04	0.75	0.68	0.30
07016 137 * @ +	TBJ B 155 * 035 C □ # @ 0 +	TBJ B 155 * 035 C □ L @ 9 +	B	1.5	35	5200	0.5	5	6	6	8	9	0.085	0.13	0.12	0.05	0.66	0.60	0.27
07016 138 * @ +	TBJ B 225 * 035 C □ # @ 0 +	TBJ B 225 * 035 C □ L @ 9 +	B	2.2	35	2000	0.8	8	10	6	8	9	0.085	0.21	0.19	0.08	0.41	0.37	0.16
07016 139 * @ +	TBJ B 335 * 035 C □ # @ 0 +	TBJ B 335 * 035 C □ L @ 9 +	B	3.3	35	1000	1.2	12	15	6	8	9	0.085	0.29	0.26	0.12	0.29	0.26	0.12
07016 140 * @ +	TBJ B 475 * 035 C □ # @ 0 +	TBJ B 475 * 035 C □ L @ 9 +	B	4.7	35	1500	1.6	16	20	6	8	9	0.085	0.24	0.21	0.10	0.36	0.32	0.14
95158 29 * ^	TBJ C 475 * 035 C □ # @ 0 +	TBJ C 475 * 035 C □ L @ 9 +	C	4.7	35	600	1.6	10.2	17	6	8	9	0.110	0.43	0.39	0.17	0.26	0.23	0.10
07016 141 * @ +	TBJ D 475 * 035 L □ # @ 0 +		D	4.7	35	450	1.6	16	20	6	8	9	0.110	0.49	0.44	0.20	0.22	0.20	0.09
07016 142 * @ +	TBJ C 685 * 035 C □ # @ 0 +		C	6.8	35	350	2.4	24	30	6	9	9	0.150	0.65	0.59	0.26	0.23	0.21	0.09
07016 143 * @ +	TBJ D 685 * 035 C □ # @ 0 +		D	6.8	35	400	2.4	24	30	6	9	9	0.165	0.64	0.58	0.26	0.26	0.23	0.10

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBJ Series



COTS-Plus – DSCC Dwgs 07016 & 95158 Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per DSCC 95158 or 07016 where applicable									Typical Ripple Data by Rating						
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
							+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
DSCC P/N	AVX DSCC & COTS-Plus P/N	AVX SRC9000 P/N	Case																
95158 20 * ^	TBJ E 685 * 035 C □ # @ 0 ^ ++		E	6.8	35	300	1.9	11.4	19	4	6	6	0.165	0.74	0.67	0.30	0.22	0.20	0.09
07016 144 * @ ^ +	TBJ C 106 * 035 C □ # @ 0 ^ ++	TBJ C 106 * 035 C □ L @ 9 ^ ++	C	10	35	1600	3.5	35	44	6	9	9	0.110	0.26	0.24	0.10	0.42	0.38	0.17
95158 27 * ^	TBJ D 106 * 035 C □ # @ 0 ^ ++	TBJ D 106 * 035 C □ L @ 9 ^ ++	D	10	35	300	3.5	35	44	4	6	6	0.150	0.71	0.64	0.28	0.21	0.19	0.08
07016 145 * @ ^ +	TBJ D 106 * 035 L □ # @ 0 ^ ++		D	10	35	125	3.5	35	42	6	9	9	0.150	1.10	0.99	0.44	0.14	0.12	0.05
95158 21 * ^	TBJ E 106 * 035 C □ # @ 0 ^ ++		E	10	35	250	2.8	16.8	28	4	6	6	0.165	0.81	0.73	0.32	0.20	0.18	0.08
07016 146 * @ ^ +	TBJ C 156 * 035 C □ # @ 0 ^ ++		C	15	35	450	5.3	53	66	6	9	9	0.110	0.49	0.44	0.20	0.22	0.20	0.09
07016 147 * @ ^ +	TBJ D 156 * 035 C □ # @ 0 ^ ++	TBJ D 156 * 035 C □ L @ 9 ^ ++	D	15	35	300	5.3	53	66	6	9	9	0.150	0.71	0.64	0.28	0.21	0.19	0.08
07016 148 * @ ^ +	TBJ D 156 * 035 L □ # @ 0 ^ ++		D	15	35	100	5.3	53	66	6	9	9	0.150	1.22	1.10	0.49	0.12	0.11	0.05
95158 22 * ^	TBJ E 156 * 035 C □ # @ 0 ^ ++		E	15	35	250	5.3	53	65.6	6	9	9	0.165	0.81	0.73	0.32	0.20	0.18	0.08
07016 149 * @ ^ +	TBJ D 226 * 035 C □ # @ 0 ^ ++	TBJ D 226 * 035 C □ L @ 9 ^ ++	D	22	35	400	7.7	77	96	6	9	9	0.150	0.61	0.55	0.24	0.24	0.22	0.10
07016 150 * @ ^ +	TBJ D 226 * 035 L □ # @ 0 ^ ++		D	22	35	125	7.7	77	96	6	9	9	0.150	1.10	0.99	0.44	0.14	0.12	0.05
95158 23 * ^	TBJ E 226 * 035 C □ # @ 0 ^ ++		E	22	35	300	7.7	77	96	6	9	9	0.165	0.74	0.67	0.30	0.22	0.20	0.09
07016 151 * @ ^ +	TBJ E 226 * 035 L □ # @ 0 ^ ++		E	22	35	125	7.7	77	96	6	9	9	0.165	1.15	1.03	0.46	0.14	0.13	0.06
07016 152 M @ ^ +	TBJ D 336 M 035 C □ # @ 0 ^ ++		D	33	35	300	11.6	116	145	6	9	9	0.150	0.71	0.64	0.28	0.21	0.19	0.08
07016 153 M @ ^ +	TBJ D 336 M 035 L □ # @ 0 ^ ++		D	33	35	200	11.6	116	145	6	9	9	0.150	0.87	0.78	0.35	0.17	0.16	0.07
07016 154 M @ ^ +	TBJ E 336 M 035 L □ # @ 0 ^ ++	TBJ E 336 M 035 L □ L @ 9 ^ ++	E	33	35	300	11.6	116	145	6	9	9	0.165	0.74	0.67	0.30	0.22	0.20	0.09
07016 155 M @ ^ +	TBJ E 476 M 035 L □ # @ 0 ^ ++		E	47	35	250	16.5	165	206	6	9	9	0.165	0.81	0.73	0.32	0.20	0.18	0.08
07016 156 M @ ^ +	TBJ V 476 M 035 L □ # @ 0 ^ ++		V	47	35	200	16.5	165	206	6	9	9	0.250	1.12	1.01	0.45	0.22	0.20	0.09
07016 157 M @ ^ +	TBJ A 154 M 050 C □ # @ 0 ^ ++		A	0.15	50	15000	0.5	5	6	4	6	6	0.075	0.07	0.06	0.03	1.06	0.95	0.42
07016 158 M @ ^ +	TBJ A 224 M 050 C □ # @ 0 ^ ++	TBJ A 224 M 050 C □ L @ 9 ^ ++	A	0.22	50	18000	0.5	5	6	4	6	6	0.075	0.06	0.06	0.03	1.16	1.05	0.46
07016 159 * @ ^ +	TBJ A 474 * 050 C □ # @ 0 ^ ++		A	0.47	50	9500	0.5	5	6	4	6	6	0.075	0.09	0.08	0.04	0.84	0.76	0.34
07016 160 * @ ^ +	TBJ B 474 * 050 C □ # @ 0 ^ ++	TBJ B 474 * 050 C □ L @ 9 ^ ++	B	0.47	50	9500	0.5	5	6	4	6	6	0.085	0.09	0.09	0.04	0.90	0.81	0.36
07016 161 * @ ^ +	TBJ A 684 * 050 C □ # @ 0 ^ ++		A	0.68	50	7900	0.5	5	6	4	6	6	0.075	0.10	0.09	0.04	0.77	0.69	0.31
07016 162 M @ ^ +	TBJ A 105 M 050 C □ # @ 0 ^ ++		A	1.0	50	6600	0.5	5	6	4	6	6	0.075	0.11	0.10	0.04	0.70	0.63	0.28
07016 163 * @ ^ +	TBJ B 105 * 050 C □ # @ 0 ^ ++	TBJ B 105 * 050 C □ L @ 9 ^ ++	B	1.0	50	7000	0.5	5	6	4	6	6	0.085	0.11	0.10	0.04	0.77	0.69	0.31
07016 164 * @ ^ +	TBJ C 155 * 050 L □ # @ 0 ^ ++	TBJ C 155 * 050 L □ L @ 9 ^ ++	C	1.5	50	2000	0.8	8	10	6	8	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
07016 165 * @ ^ +	TBJ D 155 * 050 L □ # @ 0 ^ ++	TBJ D 155 * 050 L □ L @ 9 ^ ++	D	1.5	50	1500	0.8	8	10	6	8	9	0.150	0.32	0.28	0.13	0.47	0.43	0.19
07016 166 * @ ^ +	TBJ D 225 * 050 L □ # @ 0 ^ ++	TBJ D 225 * 050 L □ L @ 9 ^ ++	D	2.2	50	1200	1.1	11	14	6	8	9	0.150	0.35	0.32	0.14	0.42	0.38	0.17
07016 167 * @ ^ +	TBJ D 335 * 050 L □ # @ 0 ^ ++	TBJ D 335 * 050 L □ L @ 9 ^ ++	D	3.3	50	800	1.7	17	21	6	9	9	0.150	0.43	0.39	0.17	0.35	0.31	0.14
07016 168 * @ ^ +	TBJ D 475 * 050 L □ # @ 0 ^ ++	TBJ D 475 * 050 L □ L @ 9 ^ ++	D	4.7	50	300	2.4	24	30	6	9	9	0.150	0.71	0.64	0.28	0.21	0.19	0.08
95158 24 * ^	TBJ E 475 * 050 C □ # @ 0 ^ ++		E	4.7	50	300	1.9	11.4	19	4	6	6	0.165	0.74	0.67	0.30	0.22	0.20	0.09
07016 169 * @ ^ +	TBJ D 685 * 050 C □ # @ 0 ^ ++	TBJ D 685 * 050 C □ L @ 9 ^ ++	D	6.8	50	600	3.4	34	43	6	6	6	0.150	0.50	0.45	0.20	0.30	0.27	0.12
07016 170 * @ ^ +	TBJ D 685 * 050 L □ # @ 0 ^ ++		D	6.8	50	300	3.4	34	43	6	6	6	0.150	0.71	0.64	0.28	0.21	0.19	0.08
07016 171 * @ ^ +	TBJ E 685 * 050 C □ # @ 0 ^ ++		E	6.8	50	400	3.4	34	43	6	6	6	0.165	0.64	0.58	0.26	0.26	0.23	0.10

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBM Multianode



Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level



TBM COTS-Plus series uses an internal multi-anode design to achieve ultra-low ESR which improves performance in high ripple power applications.

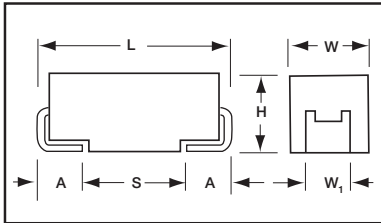
TBM is available with Weibull Grade “B” reliability and all MIL-PRF-55365 surge test options (“A”, “B” & “C”).

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated

(these correspond to “H”, “K”, “C” and “B” termination, respectively, per MIL-PRF-55365).

The molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of NASA SP-R-0022A.

This product is considered MSL 3 in accordance with J-STD-020.



CASE DIMENSIONS: millimeters (inches)

Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
E	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30 (0.051)	4.40 (0.173)

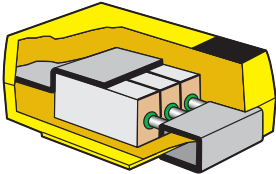
W₁ dimension applies to the termination width for A dimensional area only.

CAPACITANCE AND RATED VOLTAGE RANGE LETTER DENOTES CASE SIZE ESR LIMIT IN BRACKETS

Capacitance		Rated Voltage DC (V _R) to 85°C							
µF	Code	2.5V (e)	4V (G)	6V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)
10	106								
15	156								
22	226								E(60)
33	336								E(50)
47	476								E(55)
68	686							E(45)	
100	107						E(35)		
150	157					E(30)			
220	227					E(25)			
330	337				E(23)				
470	477			E(18)	E(23)				
680	687		E(18)	E(18), V(23)					
1000	108		E(18), V(18)						
1500	158	E(12)	E(15)						

NOTE: EIA standards for Low ESR solid tantalum capacitors allow an ESR movement of 1.25 times initial limit post mounting.

TBM MULTIANODE CONSTRUCTION



TBM Multianode



Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level

HOW TO ORDER

COTS-PLUS:

TBM	E	477	*	006	L	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10%	Voltage Code 002 = 2.5Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc	Standard or Low ESR Range L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A D = DSCC DWG (Pending)	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

SPACE LEVEL OPTIONS TO SRC9000*:

TBM	E	477	*	006	L	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10%	Voltage Code 002 = 2.5Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc	Standard or Low ESR Range L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: C = 0.01%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 45 = 10 cycles, -55°C & +85°C before Weibull

*Check with factory for availability



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of +25°C								
Capacitance Range:	22 µF to 1500 µF								
Capacitance Tolerance:	±10%; ±20%								
Rated Voltage DC (V _R)	≤+85°C:	4	6	10	16	20	25	35	
Category Voltage (V _C)	≤+125°C:	2.7	4	7	10	13	17	23	
Surge Voltage (V _S)	≤+85°C:	5.2	8	13	20	26	32	46	
	≤+125°C:	3.4	5	8	12	16	20	28	
Temperature Range:	-55°C to +125°C								



TBM Multianode



Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating									Typical Ripple Data by Rating						
		Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)
					+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)							
AVX P/N	Case																
TBME158*002L□SB0^++	E	1500	2.5	12	38	380	760	6	9	10	0.165	4.743	4.269	1.897	0.057	0.051	0.023
TBME687*004L□SB0^++	E	680	4	18	27	270	540	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.028
TBME108*004L□SB0^++	E	1000	4	18	40	400	800	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.028
TBMV108*004L□SB0^++	V	1000	4	18	40	400	800	6	9	10	0.250	3.979	3.581	1.592	0.072	0.064	0.029
TBME158*004L□SB0^++	E	1500	4	15	60	400	1200	6	9	10	0.165	4.243	3.818	1.697	0.064	0.057	0.025
TBME477*006L□SB0^++	E	470	6	18	28	280	560	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.028
TBME687*006L□SB0^++	E	680	6	18	41	410	820	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.028
TBMV687*006L□SB0^++	V	680	6	23	41	410	820	6	9	10	0.250	3.520	3.168	1.408	0.081	0.073	0.032
TBME337*010L□SB0^++	E	330	10	23	33	330	660	6	9	10	0.165	3.426	3.084	1.370	0.079	0.071	0.032
TBME477*010L□SB0^++	E	470	10	23	47	470	940	6	9	10	0.165	3.426	3.084	1.370	0.079	0.071	0.032
TBME157*016L□SB0^++	E	150	16	30	24	240	480	6	9	10	0.165	3.000	2.700	1.200	0.090	0.081	0.036
TBME227*016L□SB0^++	E	220	16	25	35	350	700	6	9	10	0.165	3.286	2.958	1.315	0.082	0.074	0.033
TBME107*020L□SB0^++	E	100	20	35	20	200	400	6	9	10	0.165	2.777	2.500	1.111	0.097	0.087	0.039
TBME686*025L□SB0^++	E	68	25	45	17	170	340	6	9	10	0.165	2.449	2.205	0.980	0.110	0.099	0.044
TBME226*035L□SB0^++	E	22	35	60	8	80	160	6	9	10	0.165	2.121	1.909	0.849	0.127	0.115	0.051
TBME336*035L□SB0^++	E	33	35	50	12	120	240	6	9	10	0.165	2.324	2.091	0.930	0.116	0.105	0.046
TBME476*035L□SB0^++	E	47	35	55	16	160	320	6	9	10	0.165	2.216	1.994	0.886	0.122	0.110	0.049

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

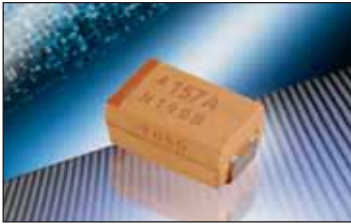
NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBW Series



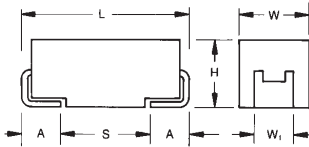
Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level



TBW Fused Tantalum Capacitors offer protection from possible damaging short circuit failure modes. This is accomplished with an internal fuse in series with the capacitor. See the photograph on the right. The AVX fused tantalum offers lower ESR limits than competitive fused tantalum capacitors, and is available with Weibull and surge testing per MIL PRF 55365.



Anode, fuse and leadframe assembly



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
C	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance μF	Rated Voltage DC (V _R) to 85°C							
	4	6	10	16	20	25	35	50
0.47								C
0.68								C
1								C
1.5			-	-	-	-	C	C
2.2			-	-	-	C	C	D
3.3			-	-	-	C	C	D
4.7		-	-	-	C	C	D	D
6.8		-	-	C	C	C	D	
10		-	C	C	C	C/D	E	E(20%)
15		C	C	C	D	D	D/E	-
22		C	C	C/D	D	D/E	E	-
33		C	C/D	D	E		-	-
47		C/D	C/D	D/E	E	-	-	-
68	C	C/D	D	E	-	-	-	-
100	C	D/E	D/E		-	-	-	-
150	D	D	D/E	-	-	-	-	-
220	D	D/E	E	-	-	-	-	-
330	E	E						
470	E							

HOW TO ORDER

COTS-PLUS & DSCC DWG (04053):

TBW	D	686	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A D = DSCC DWG	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. Z = Non-ER	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

DSCC DWG P/N CROSS REFERENCE:

04053 DSCC DWG 04053	-01 Dash Number See Rating Tables
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NOTE: DSCC DWG 04053 specifies 20% capacitance tolerance and solder plated termination options only. For 10% capacitance tolerance, solder fused finish, Weibull grading and MIL surge options, order using AVX part number above.

SPACE LEVEL OPTIONS TO SRC9000*:

TBW	D	686	*	006	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 015 = 15Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Qualifications Pending



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C									
Capacitance Range:	0.47 μF to 470 μF									
Capacitance Tolerance:	±10%; ±20%									
Rated Voltage (V _R)	≤ +85°C:	4	6	10	15	20	25	35	50	
Category Voltage (V _C)	≤ +125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage (V _S)	≤ +85°C:	5.2	8	13	20	26	32	46	65	
Surge Voltage (V _S)	≤ +125°C:	3.4	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C									

TBW Series



Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating DSCC 04053									Typical Ripple Data by Rating							
			Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
						+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)								
AVX P/N	DSCC P/N	Case																	
TBWC686*004C□#@0^++	04053	001	C	68	4	1.6	2.7	27	32.4	6	9	9	0.110	0.26	0.24	0.10	0.42	0.38	0.17
TBWC107*004C□#@0^++	04053	002	C	100	4	1.2	4	40	48	8	12	12	0.110	0.30	0.27	0.12	0.36	0.33	0.15
TBWD157*004C□#@0^++	04053	003	D	150	4	0.8	6	60	72	8	12	12	0.150	0.43	0.39	0.17	0.35	0.31	0.14
TBWD227*004C□#@0^++	04053	004	D	220	4	0.7	8.8	88	105.6	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWD337*004C□#@0^++	04053	005	D	330	4	0.7	13.2	132	158.4	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWE337*004C□#@0^++	04053	006	E	330	4	0.7	13.2	132	158.4	8	12	12	0.165	0.49	0.44	0.19	0.34	0.31	0.14
TBWE477*004C□#@0^++	04053	007	E	470	4	0.5	18.8	188	225.6	8	12	12	0.165	0.57	0.52	0.23	0.29	0.26	0.11
TBWC156*006C□#@0^++	04053	011	C	15	6	2	0.7	7	8.4	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC226*006C□#@0^++	04053	013	C	22	6	2	1.4	14	16.8	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC336*006C□#@0^++	04053	014	C	33	6	2	2	20	24	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWD476*006C□#@0^++	04053	015	D	47	6	1	2.9	29	34.8	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWC476*006C□#@0^++	04053	016	C	47	6	1.6	2.9	29	34.8	6	9	9	0.110	0.26	0.24	0.10	0.42	0.38	0.17
TBWD686*006C□#@0^++	04053	017	D	68	6	1	4.1	41	49.2	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWC686*006C□#@0^++	04053	018	C	68	6	1.2	4.1	41	49.2	6	9	9	0.110	0.30	0.27	0.12	0.36	0.33	0.15
TBWX107*006C□#@0^++	04053	019	E	100	6	0.9	6	60	72	8	12	12	0.165	0.43	0.39	0.17	0.39	0.35	0.15
TBWD107*006C□#@0^++	04053	020	D	100	6	0.8	6	60	72	8	12	12	0.150	0.43	0.39	0.17	0.35	0.31	0.14
TBWD157*006C□#@0^++	04053	021	D	150	6	0.7	9	90	108	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWD227*006C□#@0^++	04053	022	D	220	6	0.7	13.2	132	158.4	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWE227*006C□#@0^++	04053	023	E	220	6	0.7	13.2	132	158.4	8	12	12	0.165	0.49	0.44	0.19	0.34	0.31	0.14
TBWE337*006C□#@0^++	04053	024	E	330	6	0.5	19.8	198	237.6	8	12	12	0.165	0.57	0.52	0.23	0.29	0.26	0.11
TBWC106*010C□#@0^++	04053	028	C	10	10	2	1	10	12	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC156*010C□#@0^++	04053	030	C	15	10	2	1.5	15	18	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC226*010C□#@0^++	04053	031	C	22	10	2	2.2	22	26.4	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWD336*010C□#@0^++	04053	032	D	33	10	1	3.3	33	39.6	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWC336*010C□#@0^++	04053	033	C	33	10	1.6	3.3	33	39.6	6	9	9	0.110	0.26	0.24	0.10	0.42	0.38	0.17
TBWD476*010C□#@0^++	04053	034	D	47	10	1	4.7	47	56.4	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWC476*010C□#@0^++	04053	035	C	47	10	1.2	4.7	47	56.4	6	9	9	0.110	0.30	0.27	0.12	0.36	0.33	0.15
TBWE686*010C□#@0^++	04053	036	E	68	10	0.9	6.8	68	81.6	6	9	9	0.165	0.43	0.39	0.17	0.39	0.35	0.15
TBWD686*010C□#@0^++	04053	037	D	68	10	0.8	6.8	68	81.6	6	9	9	0.150	0.43	0.39	0.17	0.35	0.31	0.14
TBWD107*010C□#@0^++	04053	038	D	100	10	0.7	10	100	120	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWE157*010C□#@0^++	04053	039	E	150	10	0.7	15	150	180	8	12	12	0.165	0.49	0.44	0.19	0.34	0.31	0.14
TBWD157*010C□#@0^++	04053	040	D	150	10	0.7	15	150	180	8	12	12	0.150	0.46	0.42	0.19	0.32	0.29	0.13
TBWE227*010C□#@0^++	04053	041	E	220	10	0.5	22	220	264	8	12	12	0.165	0.57	0.52	0.23	0.29	0.26	0.11
TBWC685*016C□#@0^++	04053	045	C	6.8	16	2	1.1	11	13.2	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC106*016C□#@0^++	04053	047	C	10	16	2	1.6	16	19.2	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC156*016C□#@0^++	04053	048	C	15	16	2	2.4	24	28.8	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWD226*016C□#@0^++	04053	049	D	22	16	1	3.6	36	43.2	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWC226*016C□#@0^++	04053	050	C	22	16	1.6	3.6	36	43.2	6	9	9	0.110	0.26	0.24	0.10	0.42	0.38	0.17
TBWD336*016C□#@0^++	04053	051	D	33	16	1	5.3	53	63.6	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWE476*016C□#@0^++	04053	052	E	47	16	0.9	7.5	75	90	6	9	9	0.165	0.43	0.39	0.17	0.39	0.35	0.15
TBWD476*016C□#@0^++	04053	053	D	47	16	0.8	7.5	75	90	6	9	9	0.150	0.43	0.39	0.17	0.35	0.31	0.14
TBWE107*016C□#@0^++	04053	054	E	100	16	0.7	16	160	192	8	12	12	0.165	0.49	0.44	0.19	0.34	0.31	0.14
TBWC475*020C□#@0^++	04053	058	C	4.7	20	2	1	10	12	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC685*020C□#@0^++	04053	059	C	6.8	20	2	1.4	14	16.8	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC106*020C□#@0^++	04053	060	C	10	20	2	2	20	24	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWD156*020C□#@0^++	04053	061	D	15	20	1	3	30	36	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWD226*020C□#@0^++	04053	062	D	22	20	1	4.4	44	52.8	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWE336*020C□#@0^++	04053	063	E	33	20	0.9	6.6	66	79.2	6	9	9	0.165	0.43	0.39	0.17	0.39	0.35	0.15

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBW Series



Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level

RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating DSCC 04053										Typical Ripple Data by Rating						
			Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
						+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)								
AVX P/N	DSCC P/N	Case																	
TBWE476*004C□#@0^++	04053	064	E	47	20	0.3	9.4	94	112.8	6	9	9	0.165	0.74	0.67	0.30	0.22	0.20	0.09
TBWC225*025C□#@0^++	04053	068	C	2.2	25	3.5	0.6	6	7.2	6	9	9	0.110	0.18	0.16	0.07	0.62	0.56	0.25
TBWC335*025C□#@0^++	04053	069	C	3.3	25	2.5	0.9	9	10.8	6	9	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
TBWC475*025C□#@0^++	04053	070	C	4.7	25	2.5	1.2	12	14.4	6	9	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
TBWC685*025C□#@0^++	04053	071	C	6.8	25	2	1.7	17	20.4	6	9	9	0.110	0.23	0.21	0.09	0.47	0.42	0.19
TBWC106*025C□#@0^++	04053	072	C	10	25	0.6	2.5	25	30	6	9	9	0.110	0.43	0.39	0.17	0.26	0.23	0.10
TBWD106*025C□#@0^++	04053	073	D	10	25	1.2	2.5	25	30	6	9	9	0.150	0.35	0.32	0.14	0.42	0.38	0.17
TBWD156*025C□#@0^++	04053	074	D	15	25	1	3.8	38	45.6	6	9	9	0.150	0.39	0.35	0.15	0.39	0.35	0.15
TBWE226*025C□#@0^++	04053	075	E	22	25	0.9	5.5	55	66	6	9	9	0.165	0.43	0.39	0.17	0.39	0.35	0.15
TBWD226*025C□#@0^++	04053	076	D	22	25	0.8	5.5	55	66	6	9	9	0.150	0.43	0.39	0.17	0.35	0.31	0.14
TBWC155*035C□#@0^++	04053	080	C	1.5	35	4.5	0.5	5	6	6	9	9	0.110	0.16	0.14	0.06	0.70	0.63	0.28
TBWC225*035C□#@0^++	04053	081	C	2.2	35	3.5	0.8	8	9.6	6	9	9	0.110	0.18	0.16	0.07	0.62	0.56	0.25
TBWC335*035C□#@0^++	04053	082	C	3.3	35	2.5	1.2	12	14.4	6	9	9	0.110	0.21	0.19	0.08	0.52	0.47	0.21
TBWD475*035C□#@0^++	04053	083	D	4.7	35	1.5	1.7	17	20.4	6	9	9	0.150	0.32	0.28	0.13	0.47	0.43	0.19
TBWD685*035C□#@0^++	04053	084	D	6.8	35	1.3	2.4	24	28.8	6	9	9	0.150	0.34	0.31	0.14	0.44	0.40	0.18
TBWE106*035C□#@0^++	04053	085	E	10	35	1	3.5	35	42	6	9	9	0.165	0.41	0.37	0.16	0.41	0.37	0.16
TBWD156*035C□#@0^++			D	15	35	0.75	5.3	53	63.6	6	9	9	0.150	0.45	0.40	0.18	0.34	0.30	0.13
TBWE156*035C□#@0^++	04053	086	E	15	35	0.9	5.3	53	63.6	6	9	9	0.165	0.43	0.39	0.17	0.39	0.35	0.15
TBWE226*035C□#@0^++	04053	087	E	22	35	0.3	7.7	77	92.4	6	9	9	0.165	0.74	0.67	0.30	0.22	0.20	0.09
TBWC474*050C□#@0^++	04053	091	C	0.47	50	8	0.5	5	6	4	6	6	0.110	0.12	0.11	0.05	0.94	0.84	0.38
TBWC684*050C□#@0^++	04053	092	C	0.68	50	7	0.5	5	6	4	6	6	0.110	0.13	0.11	0.05	0.88	0.79	0.35
TBWC105*050C□#@0^++	04053	093	C	1	50	5.5	0.5	5	6	4	6	6	0.110	0.14	0.13	0.06	0.78	0.70	0.31
TBWC155*050C□#@0^++	04053	094	C	1.5	50	5	0.8	8	9.6	6	9	9	0.110	0.15	0.13	0.06	0.74	0.67	0.30
TBWD225*050C□#@0^++	04053	095	D	2.2	50	2.5	1.1	11	13.2	6	9	9	0.150	0.24	0.22	0.10	0.61	0.55	0.24
TBWD335*050C□#@0^++	04053	096	D	3.3	50	2	1.7	17	20.4	6	9	9	0.150	0.27	0.25	0.11	0.55	0.49	0.22
TBWD475*050C□#@0^++			D	4.7	50	0.75	2.4	24	28.8	6	9	9	0.150	0.45	0.40	0.18	0.34	0.30	0.13
TBWE106M050C□#@0^++			E	10	50	1.5	5	50	60	6	9	9	0.165	0.33	0.30	0.13	0.50	0.45	0.20

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBC Series



CWR15 MIL-PRF-55365/12 Established Reliability, COTS-Plus & Space Level

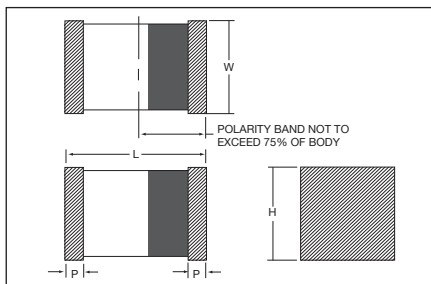


AVX announces the world's smallest military approved tantalum chip capacitors. The CWR15 offers 0603, 0805 and 1206 case sizes in capacitance/voltage combinations previously only available in much larger packages. The revolutionary AVX TACmicrochip® technology offers designers significant

opportunity to downsize circuits for military and aerospace applications. The product is manufactured in the AVX Tantalum high reliability facility in Biddeford, Maine which is also home to the CWR09, CWR11, CWR19 and CWR29 product lines.

CASE DIMENSIONS: millimeters (inches)

Case Code	Length (L)	Width (W)	Height (H)	Term. Width (W _t)
L	1.60+0.25/-0.15 (0.063+0.010/-0.006)	0.85+0.20/-0.10 (0.033+0.008/-0.004)	0.85+0.20/-0.10 (0.033+0.008/-0.004)	0.15+0.35/-0.00 (0.006+0.014/-0.000)
R	2.00+0.25/-0.15 (0.079+0.010/-0.006)	1.35+0.20/-0.10 (0.053+0.008/-0.004)	1.35+0.20/-0.10 (0.053+0.008/-0.004)	0.15+0.35/-0.00 (0.006+0.014/-0.000)
A	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.60±0.20 (0.063±0.008)	0.15+0.35/-0.00 (0.006+0.014/-0.000)



CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

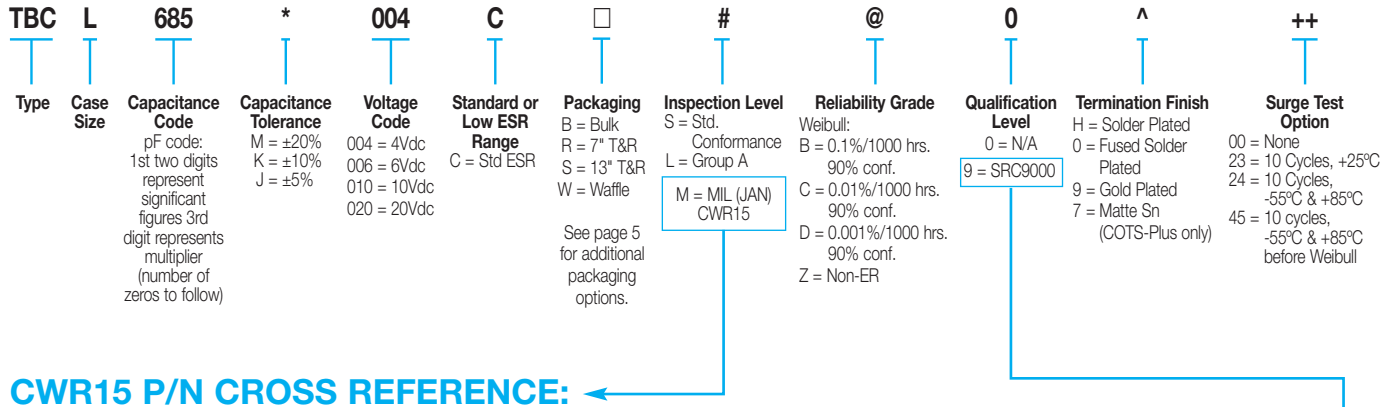
Capacitance		Voltage Rating DC (V _R) at 85°C				
μF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)
0.33	334					
0.47	474			L		L
0.68	684			L		
1.0	105			L		
1.5	155			L		
2.2	225			L		
3.3	335		L	R		
4.7	475		L	R		
6.8	685	L	R	R		
10	106	R	R	R		
15	156	R	R	A		
22	226	R	A			
33	336	R	A			
47	476		A			
68	686	A				

Further extensions of the CWR15 product are planned for later in 2009. A new case size will be added, and the voltage range will be extended to 20 volts. Ratings of 100 μF at 4 volts to 10 μF at 20 volts will be included in this extension of the product line.

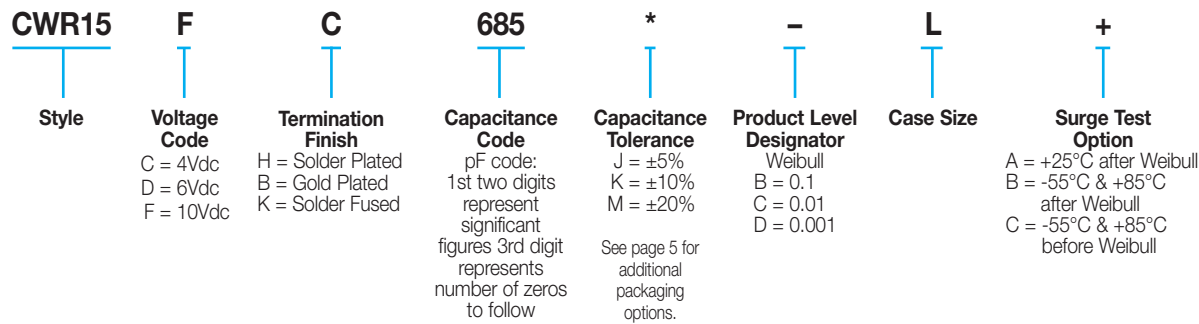


HOW TO ORDER

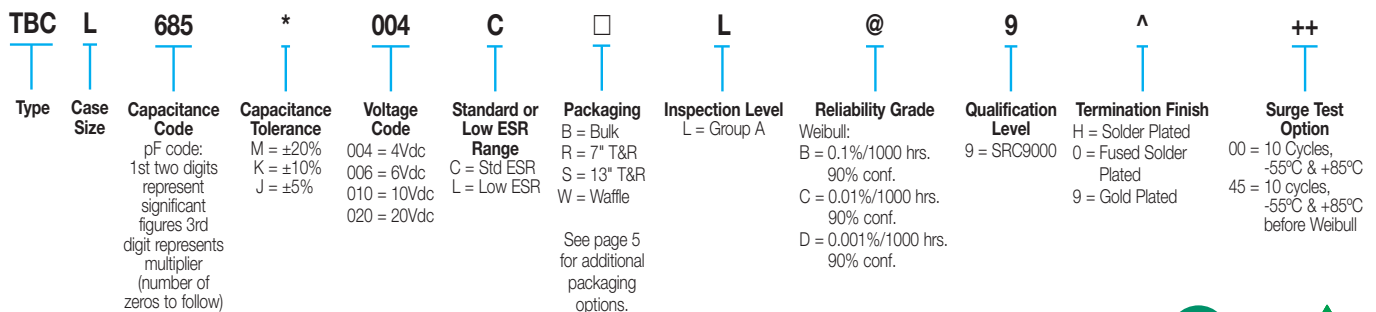
COTS-PLUS & MIL QPL (CWR15):



CWR15 P/N CROSS REFERENCE:



SPACE LEVEL OPTIONS TO SRC9000*:



*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C						
Capacitance Range:	0.47 µF to 68 µF						
Capacitance Tolerance:	±5%; ±10%; ±20%						
Rated Voltage: (V _R)	≤85°C:	4	6	10	15	20	
Category Voltage: (V _C)	125°C:	2.7	4	7	10	13	
Surge Voltage: (V _S)	≤85°C:	5.2	8	13	20	26	
	125°C:	3.4	5	8	13	16	
Temperature Range:	-55°C to +125°C						

TBC Series



CWR15 MIL-PRF-55365/12 Established Reliability, COTS-Plus & Space Level

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/12								Typical Ripple Data by Rating							
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max		Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
CWR15 P/N	AVX MIL & COTS-Plus P/N	AVX SRC9000 P/N	Case	+25°C	+85°C	+125°C	+25°C	+85/125°C	-55°C										
CWR15CK685^AL+	TBC L 685 * 004 C □ # @ 0 ^ +	TBC L 685 * 004 C □ L @ 9 ^ +	L	6.8	4	10	0.5	5	6	8	16	12	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15CK106^AR+	TBC R 106 * 004 C □ # @ 0 ^ ++	TBC R 106 * 004 C □ L @ 9 ^ ++	R	10	4	6	0.5	5	6	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15CK156^AR+	TBC R 156 * 004 C □ # @ 0 ^ ++	TBC R 156 * 004 C □ L @ 9 ^ ++	R	15	4	6	0.6	6	7	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15CK226^AR+	TBC R 226 * 004 C □ # @ 0 ^ ++	TBC R 226 * 004 C □ L @ 9 ^ ++	R	22	4	6	0.9	9	11	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15CK336^AR+	TBC R 336 * 004 C □ # @ 0 ^ ++	TBC R 336 * 004 C □ L @ 9 ^ ++	R	33	4	6	1.3	13	16	10	20	15	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15CK686^AA+	TBC A 686 * 004 C □ # @ 0 ^ +	TBC A 686 * 004 C □ L @ 9 ^ +	A	68	4	1	2.7	27	33	15	30	23	0.040	0.20	0.18	0.08	0.20	0.18	0.08
CWR15DK335^AL+	TBC L 335 * 006 C □ # @ 0 ^ +	TBC L 335 * 006 C □ L @ 9 ^ +	L	3.3	6	10	0.5	5	6	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15DK475^AL+	TBC L 475 * 006 C □ # @ 0 ^ +	TBC L 475 * 006 C □ L @ 9 ^ +	L	4.7	6	10	0.5	5	6	8	16	12	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15DK685^AR+	TBC R 685 * 006 C □ # @ 0 ^ ++	TBC R 477 * 685 C □ L @ 9 ^ ++	R	6.8	6	6	0.5	5	6	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15DK106^AR+	TBC R 106 * 006 C □ # @ 0 ^ ++	TBC R 478 * 106 C □ L @ 9 ^ ++	R	10	6	6	0.6	6	7	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15DK156^AR+	TBC R 156 * 006 C □ # @ 0 ^ ++	TBC R 156 * 006 C □ L @ 9 ^ ++	R	15	6	6	0.9	9	11	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15DK226^AA+	TBC A 226 * 006 C □ # @ 0 ^ +	TBC A 226 * 006 C □ L @ 9 ^ +	A	22	6	6	1.4	14	17	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
CWR15DK336^AA+	TBC A 336 * 006 C □ # @ 0 ^ +	TBC A 336 * 006 C □ L @ 9 ^ +	A	33	6	6	2	20	24	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
CWR15DK476^AA+	TBC A 476 * 006 C □ # @ 0 ^ +	TBC A 476 * 006 C □ L @ 9 ^ +	A	47	6	4	2.8	28	34	15	30	23	0.040	0.10	0.09	0.04	0.40	0.36	0.16
CWR15FK474^AL+	TBC L 474 * 010 C □ # @ 0 ^ +	TBC L 474 * 010 C □ L @ 9 ^ +	L	0.47	10	12	0.5	5	6	6	12	9	0.025	0.05	0.04	0.02	0.55	0.49	0.22
CWR15FK684^AL+	TBC L 684 * 010 C □ # @ 0 ^ +	TBC L 684 * 010 C □ L @ 9 ^ +	L	0.68	10	10	0.5	5	6	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15FK105^AL+	TBC L 105 * 010 C □ # @ 0 ^ +	TBC L 105 * 010 C □ L @ 9 ^ +	L	1	10	10	0.5	5	6	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15FK155^AL+	TBC L 155 * 010 C □ # @ 0 ^ +	TBC L 155 * 010 C □ L @ 9 ^ +	L	1.5	10	10	0.5	5	6	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15FK225^AL+	TBC L 225 * 010 C □ # @ 0 ^ +	TBC L 225 * 010 C □ L @ 9 ^ +	L	2.2	10	10	0.5	5	6	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
CWR15FK335^AR+	TBC R 335 * 010 C □ # @ 0 ^ +	TBC R 335 * 010 C □ L @ 9 ^ +	R	3.3	10	6	0.5	5	6	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15FK475^AR+	TBC R 475 * 010 C □ # @ 0 ^ +	TBC R 475 * 010 C □ L @ 9 ^ +	R	4.7	10	6	0.5	5	6	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15FK685^AR+	TBC R 685 * 010 C □ # @ 0 ^ +	TBC R 685 * 010 C □ L @ 9 ^ +	R	6.8	10	6	0.7	7	8.5	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15FK106^AR+	TBC R 106 * 010 C □ # @ 0 ^ +	TBC R 106 * 010 C □ L @ 9 ^ +	R	10	10	6	1	10	12	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
CWR15FK156^AR+	TBC A 156 * 010 C □ # @ 0 ^ +	TBC A 156 * 010 C □ L @ 9 ^ +	A	15	10	6	1.5	15	18	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
CWR15JK474^AR+	TBC L 474 * 020 C □ # @ 0 ^ +	TBC L 474 * 020 C □ L @ 9 ^ +	L	0.47	20	24	0.5	5	6	6	12	9	0.025	0.03	0.03	0.01	0.77	0.70	0.31

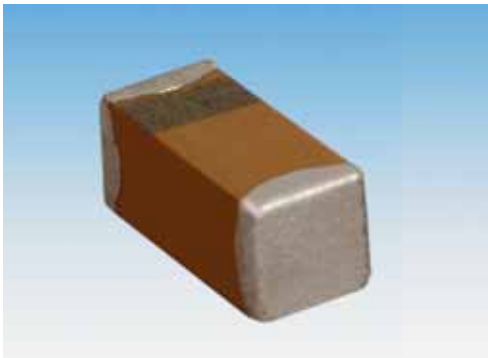
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



TBC Series

TBC COTS-Plus

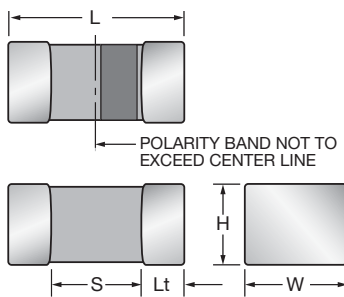


TBC COTS-Plus series extends the range of CWR15. TBC is available with Weibull grade “B” reliability and all MIL-PRF-55365 surge test options (“A”, “B” & “C”).

For Space Level applications, AVX SRC9000 ratings are available as shown in the rating table.

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these correspond to “H”, “K”, “C” and “B” termination, respectively, per MIL-PRF 55365).

CASE DIMENSIONS: millimeters (inches)



Code	EIA Code	EIA Metric	Length (L)	Width (W)	Height (H)	Termination Spacing(S)	Minimum Termination Length (Lt)	Average Mass
A	1206	3216-18	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.60±0.20 (0.063±0.008)	1.80 min. (0.071 min.)	0.15 (0.006)	44.6mg
B	1210	3528-15	3.50 ^{+0.20} _{-0.20} (0.138 ^{+0.008} _{-0.008})	2.80 ^{+0.20} _{-0.10} (0.110 ^{+0.008} _{-0.004})	1.50 max.	2.00 min.	0.15 min.	90.0mg
K	0402	1005-07	1.00 ^{+0.20} _{-0.00} (0.039 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.50 ^{+0.20} _{-0.00} (0.020 ^{+0.008} _{-0.000})	0.40 min. (0.016 min.)	0.10 (0.004)	2.0mg
L	0603	1608-10	1.60 ^{+0.25} _{-0.15} (0.063 ^{+0.010} _{-0.006})	0.85 ^{+0.20} _{-0.10} (0.033 ^{+0.008} _{-0.004})	0.85 ^{+0.20} _{-0.10} (0.033 ^{+0.008} _{-0.004})	0.55 min. (0.022 min.)	0.15 (0.006)	8.6mg
R	0805	2012-15	2.00 ^{+0.25} _{-0.15} (0.079 ^{+0.010} _{-0.006})	1.35 ^{+0.20} _{-0.10} (0.053 ^{+0.008} _{-0.004})	1.35 ^{+0.20} _{-0.10} (0.053 ^{+0.008} _{-0.004})	0.70 min. (0.027 min.)	0.15 (0.006)	29.9mg

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Voltage Rating DC (V _R) at 85°C						
μF	Code	3V	4V	6V	10V	16V	20V	25V
0.33	334				K / L	L	L	L
0.47	474				L	L		
0.68	684				L	L		
1.0	105			K	L	L		
1.5	155				L	L		
2.2	225				L	L		
3.3	335				L / R		R	
4.7	475			L	L / R		R	
6.8	685			R	R			
10	106	R	R	R	R	R		
15	156		R		A			
22	226		R	R / A				
33	336	R	R	A				
47	476			A				
68	686		A					

TBC Series



TBC COTS-Plus

HOW TO ORDER

COTS-PLUS:

TBC	L	685	*	004	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 003 = 3Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc	Standard or Low ESR Range C = Std ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level S = Std. Conformance L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. Z = Non-ER None required	Qualification Level 0 = N/A 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	Surge Test Option 00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

SPACE LEVEL OPTIONS TO SRC9000*:

TBC	L	685	*	004	C	□	L	@	9	^	++
Type	Case Size	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance M = ±20% K = ±10% J = ±5%	Voltage Code 003 = 3Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc	Standard or Low ESR Range C = Std ESR L = Low ESR	Packaging B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 5 for additional packaging options.	Inspection Level L = Group A	Reliability Grade Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	Qualification Level 9 = SRC9000	Termination Finish H = Solder Plated 0 = Fused Solder Plated 9 = Gold Plated	Surge Test Option 00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Contact factory for AVX SRC9000 Space Level SCD details.



TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C										
Capacitance Range:	0.47 μF to 150 μF										
Capacitance Tolerance:	±10%; ±20%										
Leakage Current DCL:	0.01CV or 0.5μA whichever is the greater										
Rated Voltage (V _R)	≧ +85°C:	2	3	4	5	6.3	10	16	20	25	
Category Voltage (V _C)	≧ +125°C:	1.3	2	2.7	3.3	4	7	10	13	17	
Surge Voltage (V _S)	≧ +85°C:	2.7	3.9	5.2	6.5	8	13	20	26	32	
Surge Voltage (V _S)	≧ +125°C:	1.7	2.6	3.2	4	5	8	12	16	20	
Temperature Range:	-55°C to +125°C										



TBC Series

TBC COTS-Plus



RATING & PART NUMBER REFERENCE			Parametric Specifications by Rating										Typical Ripple Data by Rating						
			Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max			Power Dissipation W	25°C Ripple A (100kHz)	85°C Ripple A (100kHz)	125°C Ripple A (100kHz)	25°C Ripple V (100kHz)	85°C Ripple V (100kHz)	125°C Ripple V (100kHz)	
						+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+85/125°C (%)	-55°C (%)								
AVX P/N	AVX SRC9000 P/N	Case EIA AVX	R	R	R	R	R	R	R	R	R	R	R	R	R	R			
TBC R 156 * 003 C # @ 0 ^ + +	TBC R 156 * 003 C L @ 9 ^ + +	0805	R	15	3.0	6	0.5	5.0	6.3	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 336 * 003 C # @ 0 ^ + +	TBC R 336 * 003 C L @ 9 ^ + +	0805	R	33	3.0	6	1.0	9.9	12.4	10	20	15	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 106 * 004 C # @ 0 ^ + +	TBC R 106 * 004 C L @ 9 ^ + +	0805	R	10	4.0	6	0.5	5.0	6.3	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 156 * 004 C # @ 0 ^ + +	TBC R 156 * 004 C L @ 9 ^ + +	0805	R	15	4.0	6	0.6	6.0	7.5	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 226 * 004 C # @ 0 ^ + +	TBC R 226 * 004 C L @ 9 ^ + +	0805	R	22	4.0	6	0.9	8.8	11.0	15	30	23	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 336 B 004 C # @ 0 ^ + +	TBC R 336 B 004 C L @ 9 ^ + +	0805	R	33	4.0	6	1.3	13.2	16.5	10	20	15	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC A 686 * 004 C # @ 0 ^ + +	TBC A 686 * 004 C L @ 9 ^ + +	1206	A	68	4.0	1	2.7	27.2	34.0	15	30	23	0.040	0.20	0.18	0.08	0.20	0.18	0.08
TBC K 105 * 006 C # @ 0 ^ + +	TBC K 105 * 006 C L @ 9 ^ + +	0402	K	1.0	6.3	15	0.5	5.0	6.3	6	12	9	0.015	0.03	0.03	0.01	0.47	0.43	0.19
TBC L 475 * 006 C # @ 0 ^ + +	TBC L 475 * 006 C L @ 9 ^ + +	0603	L	4.7	6.3	10	0.5	5.0	6.3	8	16	12	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC R 685 * 006 C # @ 0 ^ + +	TBC R 685 * 006 C L @ 9 ^ + +	0805	R	6.8	6.3	6	0.5	5.0	6.3	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 106 * 006 C # @ 0 ^ + +	TBC R 106 * 006 C L @ 9 ^ + +	0805	R	10	6.3	6	0.6	6.3	7.9	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 226 K 006 C # @ 0 ^ + +	TBC R 226 K 006 C L @ 9 ^ + +	0805	R	22	6.3	6	1.4	13.9	17.3	15	30	23	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC A 226 K 006 C # @ 0 ^ + +	TBC A 226 K 006 C L @ 9 ^ + +	1206	A	22	6.3	6	1.4	13.9	17.3	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
TBC A 336 K 006 C # @ 0 ^ + +	TBC A 336 K 006 C L @ 9 ^ + +	1206	A	33	6.3	6	2.1	20.8	26.0	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
TBC A 476 * 006 C # @ 0 ^ + +	TBC A 476 * 006 C L @ 9 ^ + +	1206	A	47	6.3	1	3.0	29.6	37.0	15	30	23	0.040	0.20	0.18	0.08	0.20	0.18	0.08
TBC K 474 * 010 C # @ 0 ^ + +	TBC K 474 * 010 C L @ 9 ^ + +	0402	K	0.47	10	15	0.5	5.0	6.3	6	12	9	0.015	0.03	0.03	0.01	0.47	0.43	0.19
TBC L 474 * 010 C # @ 0 ^ + +	TBC L 474 * 010 C L @ 9 ^ + +	0603	L	0.47	10	12	0.5	5.0	6.3	6	12	9	0.025	0.05	0.04	0.02	0.55	0.49	0.22
TBC L 684 * 010 C # @ 0 ^ + +	TBC L 684 * 010 C L @ 9 ^ + +	0603	L	0.68	10	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 105 * 010 C # @ 0 ^ + +	TBC L 105 * 010 C L @ 9 ^ + +	0603	L	1.0	10	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 155 * 010 C # @ 0 ^ + +	TBC L 155 * 010 C L @ 9 ^ + +	0603	L	1.5	10	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 225 * 010 C # @ 0 ^ + +	TBC L 225 * 010 C L @ 9 ^ + +	0603	L	2.2	10	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 335 * 010 C # @ 0 ^ + +	TBC L 335 * 010 C L @ 9 ^ + +	0603	L	3.3	10	10	0.5	5.0	6.3	8	16	12	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC R 335 * 010 C # @ 0 ^ + +	TBC R 335 * 010 C L @ 9 ^ + +	0805	R	3.3	10	6	0.5	5.0	6.3	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC L 475 * 010 C # @ 0 ^ + +	TBC L 475 * 010 C L @ 9 ^ + +	0603	L	4.7	10	10	0.5	4.7	5.9	10	20	15	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC R 475 * 010 C # @ 0 ^ + +	TBC R 475 * 010 C L @ 9 ^ + +	0805	R	4.7	10	6	0.5	4.7	5.9	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 685 * 010 C # @ 0 ^ + +	TBC R 685 * 010 C L @ 9 ^ + +	0805	R	6.8	10	6	0.7	6.8	8.5	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 106 * 010 C # @ 0 ^ + +	TBC R 106 * 010 C L @ 9 ^ + +	0805	R	10	10	6	1.0	10.0	12.5	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC A 156 * 010 C # @ 0 ^ + +	TBC A 156 * 010 C L @ 9 ^ + +	1206	A	15	10	6	1.5	15.0	18.8	10	20	15	0.040	0.08	0.07	0.03	0.49	0.44	0.20
TBC L 474 * 016 C # @ 0 ^ + +	TBC L 474 * 016 C L @ 9 ^ + +	0603	L	0.47	16	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 684 * 016 C # @ 0 ^ + +	TBC L 684 * 016 C L @ 9 ^ + +	0603	L	0.68	16	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 105 * 016 C # @ 0 ^ + +	TBC L 105 * 016 C L @ 9 ^ + +	0603	L	1.0	16	10	0.5	5.0	6.3	6	12	9	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC L 225 * 016 C # @ 0 ^ + +	TBC L 225 * 016 C L @ 9 ^ + +	0603	L	2.2	16	10	0.5	5.0	6.3	10	20	15	0.025	0.05	0.05	0.02	0.50	0.45	0.20
TBC R 106 * 016 C # @ 0 ^ + +	TBC R 106 * 016 C L @ 9 ^ + +	0805	R	10	16	6	1.6	16.0	20.0	10	20	15	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC L 474 * 016 C # @ 0 ^ + +	TBC L 474 * 016 C L @ 9 ^ + +	0603	L	0.47	20	24	0.5	5.0	6.3	6	12	9	0.025	0.03	0.03	0.01	0.77	0.70	0.31
TBC R 335 * 020 C # @ 0 ^ + +	TBC R 335 * 020 C L @ 9 ^ + +	0805	R	3.3	20	6	0.7	6.6	8.3	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC R 475 M 020 C # @ 0 ^ + +	TBC R 475 M 020 C L @ 9 ^ + +	0805	R	4.7	20	6	0.9	9.4	11.8	8	16	12	0.045	0.09	0.08	0.03	0.52	0.47	0.21
TBC L 334 M 025 C # @ 0 ^ + +	TBC L 334 M 025 C L @ 9 ^ + +	0603	L	0.33	25	30	0.5	5.0	6.3	6	12	9	0.025	0.03	0.03	0.01	0.87	0.78	0.35

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.



Niobium Oxide Capacitor Weibull Grade



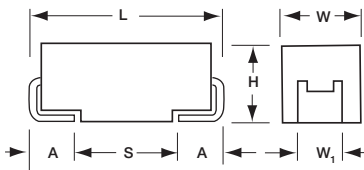
NBS, Niobium Oxide COTS+ Capacitors offer a non-burn solution for Military and Space applications. Niobium Oxide COTS+ Capacitors may be specified with failure rate grading to Weibull “B” or “C”

and surge current tested in accordance with Mil-PRF-55365 options A or B.

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.80 (0.071)
B	3528	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	7361	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30 (0.051)	1.80 (0.071)

W₁ dimension applies to the termination width for A dimensional area only.



CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) to 85°C / 0.66 DC to 105°C / 0.5 DC to 125°C			
μF	Code	1.8V (x)	2.5V (e)	4.0V (G)	6.3V (J)
4.7	475				
6.8	685				
10	106				A(1000,2000)
15	156			A(1500)	B(600)
22	226		A(900)	B(600)	B(600)
33	336		B(600)*	B(600)	B(600)/C(500)
47	476		B(500)	B(500)/C(300)	C(300)
68	686		C(200)	C(200)	C(75,200)
100	107	B(350)	C(150)	C(70,150)	C(150)/D(80,100)
150	157		C(65,150)	C(90,150)	D(50,70,100)
220	227	C(125)	C(80,125)	D(60,150)	D(60,100) E(80,100)
330	337		D(35,50,100)	D(55,100)/E(100)	E(80,100)
470	477		D(55,100)/E(100)	D(35,40,100) E(75,100)	V(75)
680	687		E(60)	V(75)	
1000	108		V(50)		
1500	158				

*Please Contact Manufacturer

HOW TO ORDER

NBS	E	227	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	Standard or Low ESR Range	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	M = ±20%	001 = 1.8Vdc 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc	L = Low ESR	B = Bulk R = 7* T&R S = 13* T&R W = Waffle See page 5 for additional packaging options.	S = Std. Conformance L = Group A D = DSCC DWG	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf.	0 = N/A	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull



TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C is not stated				
Capacitance Range:	220 µF to 680 µF				
Capacitance Tolerance:	±20%				
Leakage Current DCL:	0.02CV				
Rated Voltage (V _R)	≤+85°C:	1.8	2.5	4	6
Category Voltage (V _C)	≤+125°C:	0.9	1.3	2	3
Surge Voltage (V _S)	≤+85°C:	2.3	3.3	5.2	8
	≤+125°C:	1.2	1.7	2.6	4
Temperature Range:	-55°C to +125°C				

Niobium Oxide Capacitor Weibull Grade

RATINGS & PART NUMBER REFERENCE

AVX Part Number	Case Size	Cap (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Rating (A)			100kHz Ripple Voltage Ratings (V)		
							25°C	85°C	125°C	25°C	85°C	105°C
1.8 Volt @ 85°C (1.2 Volt @ 105°C, 0.9V @ 125°C)												
NBS B107M001 L □#00 ^ +	B	100	1.8	3.6	6	350	0.540	0.486	0.216	0.189	0.170	0.076
NBS C227M001 L □#00 ^ +	C	220	1.8	8.0	8	125	1.028	0.925	0.411	0.128	0.116	0.051
2.5 Volt @ 85°C (1.7 Volt @ 105°C, 1.3V @ 125°C)												
NBS A226M002 L □#00 ^ +	A	22	2.5	1.1	6	900	0.316	0.285	0.126	0.285	0.256	0.114
NBS B336M002 L □#00 ^ +	B	33	2.5	1.7	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS B476M002 L □#00 ^ +	B	47	2.5	2.4	6	500	0.452	0.406	0.181	0.226	0.203	0.090
NBS C686M002 L □#00 ^ +	C	68	2.5	3.4	6	200	0.812	0.731	0.325	0.162	0.146	0.065
NBS C107M002 L □#00 ^ +	C	100	2.5	5.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NBS C157M002 L □#00 ^ +	C	150	2.5	7.6	6	65	1.425	1.283	0.570	0.093	0.083	0.037
NBS C157M002 C □#00 ^ +	C	150	2.5	7.6	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NBS C227M002 L □#00 ^ +	C	220	2.5	11.0	8	80	1.285	1.156	0.514	0.103	0.092	0.041
NBS C227M002 C □#00 ^ +	C	220	2.5	11.0	8	125	1.028	0.925	0.411	0.128	0.116	0.051
NBS D337M002 L □#00 ^ +	D	330	2.5	16.5	6	35	2.268	2.041	0.907	0.079	0.071	0.032
NBS D337M002 C □#00 ^ +	D	330	2.5	16.5	10	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS D477M002 C □#00 ^ +	D	470	2.5	23.5	10	55	1.809	1.628	0.724	0.099	0.090	0.040
NBS D477M002 L □#00 ^ +	D	470	2.5	23.5	10	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS E477M002 L □#00 ^ +	E	470	2.5	23.5	10	100	1.407	1.266	0.563	0.141	0.127	0.056
NBS E687M002 L □#00 ^ +	E	680	2.5	34.0	12	60	1.817	1.635	0.727	0.109	0.098	0.044
NBS V108M002 L □#00 ^ +	V	1000	2.5	50.0	18	50	2.449	2.205	0.980	0.122	0.110	0.049
4 Volt @ 85°C (2.7 Volt @ 105°C, 2V @ 125°C)												
NBS A156M004 L □#00 ^ +	A	15	4	1.2	6	1500	0.245	0.220	0.098	0.367	0.331	0.147
NBS B226M004 L □#00 ^ +	B	22	4	1.8	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS B336M004 L □#00 ^ +	B	33	4	2.6	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS B476M004 L □#00 ^ +	B	47	4	3.8	6	500	0.452	0.406	0.181	0.226	0.203	0.090
NBS C476M004 L □#00 ^ +	C	47	4	3.8	6	300	0.663	0.597	0.265	0.199	0.179	0.080
NBS C686M004 L □#00 ^ +	C	68	4	5.4	6	200	0.812	0.731	0.235	0.162	0.146	0.065
NBS C107M004 L □#00 ^ +	C	100	4	8.0	6	70	1.373	1.236	0.549	0.096	0.087	0.038
NBS C107M004 C □#00 ^ +	C	100	4	8.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NBS C157M004 L □#00 ^ +	C	150	4	12.0	6	90	1.211	1.090	0.484	0.109	0.098	0.044
NBS C157M004 C □#00 ^ +	C	150	4	12.0	6	150	0.938	0.844	0.375	0.141	0.127	0.056
NBS D227M004 L □#00 ^ +	D	220	4	17.6	8	60	1.732	1.559	0.693	0.104	0.094	0.042
NBS D227M004 C □#00 ^ +	D	220	4	17.6	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS D337M004 L □#00 ^ +	D	330	4	26.4	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS E337M004 C □#00 ^ +	E	330	4	26.4	8	100	1.407	1.266	0.563	0.141	0.127	0.056
NBS D477M004 L □#00 ^ +	D	470	4	37.6	12	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS E477M004 L □#00 ^ +	E	470	4	37.6	12	75	1.625	1.462	0.650	0.122	0.110	0.049
NBS E477M004 C □#00 ^ +	E	470	4	37.6	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NBS V687M004 L □#00 ^ +	V	680	4	54.4	14	75	2.000	1.800	0.800	0.150	0.135	0.060
6.3 Volt @ 85°C (4 Volt @ 105°C, 3V @ 125°C)												
NBS A106M006 L □#00 ^ +	A	10	6.3	1.2	6	1000	0.300	0.270	0.120	0.300	0.270	0.120
NBS A106M006 C □#00 ^ +	A	10	6.3	1.2	6	2000	0.212	0.191	0.085	0.424	0.382	0.170
NBS B156M006 L □#00 ^ +	B	15	6.3	1.8	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS B226M006 L □#00 ^ +	B	22	6.3	2.6	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS B336M006 L □#00 ^ +	B	33	6.3	4.0	6	600	0.412	0.371	0.165	0.247	0.223	0.099
NBS C336M006 L □#00 ^ +	C	33	6.3	4.0	6	500	0.514	0.462	0.206	0.257	0.231	0.103
NBS C476M006 L □#00 ^ +	C	47	6.3	5.7	6	300	0.663	0.597	0.265	0.199	0.179	0.080
NBS C686M006 L □#00 ^ +	C	68	6.3	8.2	6	75	1.327	1.194	0.531	0.099	0.090	0.040
NBS C686M006 C □#00 ^ +	C	68	6.3	8.2	6	200	0.812	0.731	0.325	0.162	0.146	0.065
NBS C107M006 L □#00 ^ +	C	100	6.3	12.0	8	150	0.938	0.844	0.375	0.141	0.127	0.056
NBS D107M006 L □#00 ^ +	D	100	6.3	12.0	6	80	1.500	1.350	0.600	0.120	0.108	0.048
NBS D107M006 C □#00 ^ +	D	100	6.3	12.0	6	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS D157M006 L □#00 ^ +	D	150	6.3	18.0	6	70	1.604	1.443	0.641	0.112	0.101	0.045
NBS D157M006 C □#00 ^ +	D	150	6.3	18.0	6	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS D227M006 L □#00 ^ +	D	220	6.3	26.4	8	60	1.732	1.559	0.693	0.104	0.094	0.042
NBS D227M006 C □#00 ^ +	D	220	6.3	26.4	8	100	1.342	1.207	0.537	0.134	0.121	0.054
NBS E227M006 L □#00 ^ +	E	220	6.3	26.4	12	80	1.573	1.416	0.629	0.126	0.113	0.050
NBS E227M006 L □#00 ^ +	E	220	6.3	26.4	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NBS E337M006 L □#00 ^ +	E	330	6.3	39.6	12	80	1.573	1.416	0.629	0.126	0.113	0.050
NBS E337M006 L □#00 ^ +	E	330	6.3	39.6	12	100	1.407	1.266	0.563	0.141	0.127	0.056
NBS V477M006 L □#00 ^ +	V	470	6.3	56.4	12	75	2.000	1.800	0.800	0.150	0.135	0.060

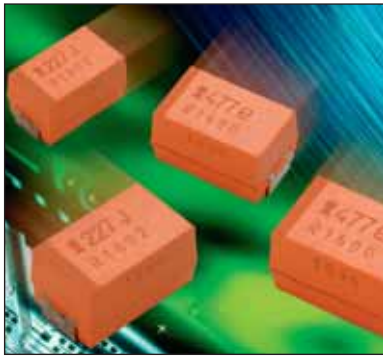
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

NBM Multianodes

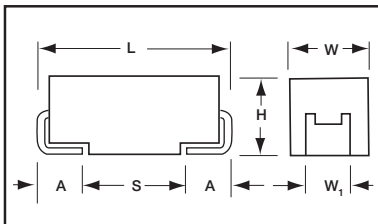


OxiCap® Ultra Low ESR Capacitor COTS-Plus Weibull Grade



NBM OxiCap® capacitors are the COTS-Plus version of the popular NOM Low ESR multianode capacitor. Capacitors are available to Weibull failure rates B and C along with surge current testing per

Mil-PRF-55365. Niobium oxide technology offers non-burn characteristics along with excellent reliability and reduced derating.



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
E	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R) to 85°C / 0.66 DC to 105°C / 0.5 DC to 125°C			
μF	Code	1.8V (x)	2.5V (e)	4.0V (G)	6.0V (J)
150	157				
220	227				E(40)
330	337			E(35)	E(23)
470	477		E(30)	E(23)	
680	687	E(23)	E(23)		
1000	108				

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C is not stated				
Capacitance Range:	220 μF to 680 μF				
Capacitance Tolerance:	±20%				
Leakage Current DCL:	0.02CV				
Rated Voltage DC (V _R)	≤+85°C:	1.8	2.5	4	6
Category Voltage (V _C)	≤+125°C:	0.9	1.3	2	3
Surge Voltage (V _S)	≤+85°C:	2.3	3.3	5.2	8
	≤+125°C:	1.2	1.7	2.6	4
Temperature Range:	-55°C to +125°C				

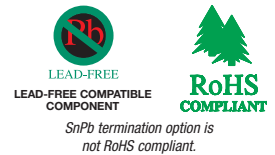
NBM Multianodes



OxiCap® Ultra Low ESR Capacitor COTS-Plus Weibull Grade

HOW TO ORDER

NBM	E	227	*	006	C	□	#	@	0	^	++
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	Standard or Low ESR Range	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	M = ±20%	001 = 1.8Vdc 002 = 2.5Vdc 004 = 4Vdc 006 = 6Vdc	L = Low ESR	B = Bulk R = 7* T&R S = 13* T&R W = Waffle See page 5 for additional packaging options.	S = Std. Conformance L = Group A D = DSCC DWG	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf.	0 = N/A	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull



RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage(V)	DCL (µA)	DF %	ESR Max. (mΩ)	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25°C	85°C	125°C	25°C	85°C	125°C
NBME687M001C□SB07++	E	680	1.8	24.5	6	23	3.753	3.378	1.501	0.086	0.078	0.035
NBME477M002C□SB07++	E	470	2.5	23.5	10	30	3.286	2.958	1.315	0.099	0.089	0.039
NBME687M002C□SB07++	E	680	2.5	34	6	23	3.753	3.378	1.501	0.086	0.078	0.035
NBME337M004C□SB07++	E	330	4	26.4	8	35	3.043	2.738	1.217	0.106	0.096	0.043
NBME477M004C□SB07++	E	470	4	37.6	6	23	3.753	3.378	1.501	0.086	0.078	0.035
NBME227M006C□SB07++	E	220	6	26.4	12	40	2.846	2.561	1.138	0.114	0.102	0.046
NBME337M006C□SB07++	E	330	6	39.6	6	23	3.753	3.378	1.501	0.086	0.078	0.035

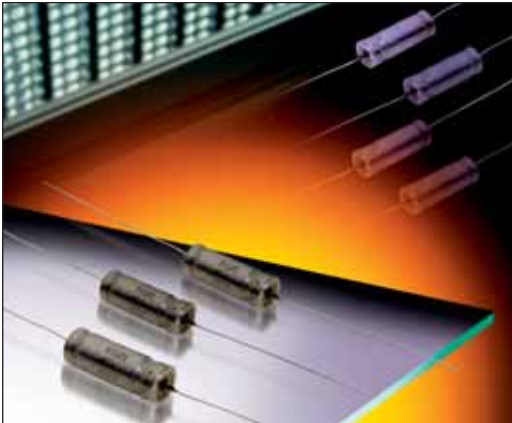
All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V. DCL is measured at rated voltage after 5 minutes.

NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

TWA Series



TWA Wet Electrolytic Tantalum Capacitor

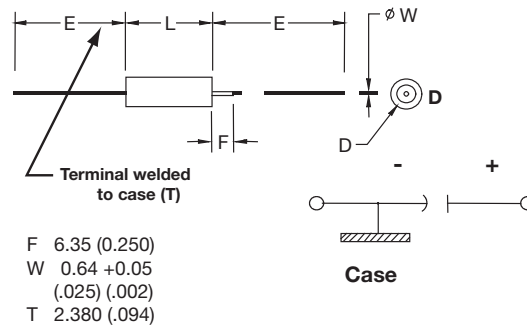


The TWA series is an axial leaded wet electrolytic tantalum capacitor and represents a new level of high CV (capacitance / voltage) previously unavailable in this technology. TWA incorporates a novel, very high capacitance cathode system that allows for higher CV designs, well beyond values specified in the MIL-PRF-39006 drawing. TWA products are listed in DSCC 93026, which includes new high capacitance / voltage ratings.

This design includes a welded tantalum can and header assembly that provides a hermetic seal to withstand the harsh shock and vibration requirements of M39006.

Contact the factory about design possibilities beyond those contained in this datasheet.

OUTLINE DIMENSIONS



CASE DIMENSIONS: millimeters (inches)

DSCC Case Size	AVX Case Size	L	D		E
			Without Insulating Sleeve	With Insulating Sleeve Max	
		+0.79 (0.031) -0.41 (0.016)	±0.41 (0.016)		±6.35 (0.250)
T1	A	11.51 (0.453)	4.78 (0.188)	5.56 (0.219)	38.10 (1.500)
T2	B	16.28 (0.641)	7.14 (0.281)	7.92 (0.312)	57.15 (2.250)
T3	D	19.46 (0.766)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)
T4	E	26.97 (1.062)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)

VOLTAGE RATINGS (Operating Temperature -55°C to 125°C)

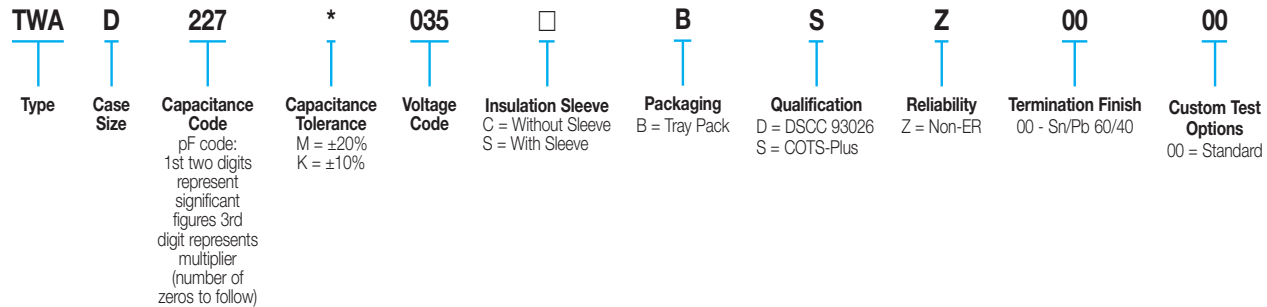
Voltage (DC)								
Rated Voltage: (Ur)	85°C	25	30	50	60	75	100	125
Derated Voltage: (Uc)	125°C	15	20	30	40	50	65	85
Surge Voltage: (Us)	85°C	28.8	34.5	57.5	69	86.3	115	144



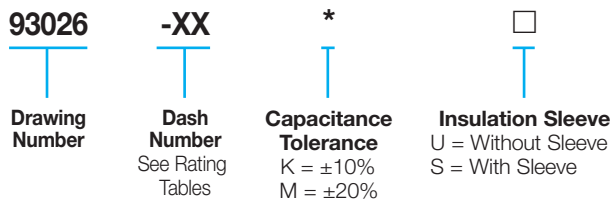
TWA Wet Electrolytic Tantalum Capacitor

HOW TO ORDER

AVX PART NUMBER:



DSCC PART IDENTIFICATION NUMBER (PIN):



SnPb termination option is not RoHS compliant.

RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage^{1/2/}

Frequency of Applied Ripple Current		120Hz				800Hz				1kHz				
		Ambient Still Air Temperature (°C)												
		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125	
% of	100%	0.60	0.39	–	–	0.71	0.43	–	–	0.72	0.45	–	–	
	85°C	0.60	0.46	–	–	0.71	0.55	–	–	0.72	0.55	–	–	
Rated	80%	0.60	0.52	0.35	–	0.71	0.62	0.42	–	0.72	0.62	0.42	–	
	70%	0.60	0.58	0.44	–	0.71	0.69	0.52	–	0.72	0.70	0.52	–	
Voltage		66-2/3%	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32

Frequency of Applied Ripple Current		10kHz				40kHz				100kHz				
		Ambient Still Air Temperature (°C)												
		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125	
% of	100%	0.88	0.55	–	–	1.00	0.63	–	–	1.10	0.69	–	–	
	85°C	0.88	0.67	–	–	1.00	0.77	–	–	1.10	0.85	–	–	
Rated	80%	0.88	0.76	0.52	–	1.00	0.87	0.59	–	1.10	0.96	0.65	–	
	70%	0.88	0.85	0.64	–	1.00	0.97	0.73	–	1.10	1.07	0.80	–	
Voltage		66-2/3%	0.88	0.88	0.68	0.40	1.00	1.00	0.77	0.45	1.10	1.10	0.85	0.50

1/ At 125°C the rated voltage of the capacitors decreases to 66 2/3 of the 85°C rated voltage.

2/ The peak of the applied ac ripple voltage plus the applied dc voltage must not exceed the dc voltage rating of the capacitors.

TWA Series



TWA Wet Electrolytic Tantalum Capacitor

RATINGS & PART NUMBER REFERENCE

AVX Part Number	DSCC Part Number	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	ESR max (ohms) at 120Hz	DC Leakage max (µA)		Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size	
					+25°C	+85°C & 125°C		-55°C	+85°C	+125°C		AVX	DSCC
25 VDC at 85°C 15 VDC at 125°C													
TWAA127*025□BSZ0000	93026- 29□	120	25	1.3	1	5	25	-42	8	12	1250	A	T1
TWAB567*025□BSZ0000	93026- 30□	560	25	0.83	2	10	12	-65	10	15	2100	B	T2
TWAD128*025□BSZ0000	93026- 31□	1200	25	0.65	5	20	7	-70	12	18	2600	D	T3
TWAE188*025□BSZ0000	93026- 32□	1800	25	0.5	6	25	7	-75	12	20	3100	E	T4
TWAE228*025□BSZ0000	93026- 64□	2200	25	0.5	10	80	10	-90	30	50	3200	E	T4
30 VDC at 85°C 20 VDC at 125°C													
TWAA107*030□BSZ0000	93026- 33□	100	30	1.3	1	5	25	-38	8	12	1200	A	T1
TWAB477*030□BSZ0000	93026- 34□	470	30	0.85	2	10	15	-65	10	18	1800	B	T2
TWAD108*030□BSZ0000	93026- 35□	1000	30	0.7	7	25	7	-70	10	18	2500	D	T3
TWAE158*030□BSZ0000	93026- 36□	1500	30	0.6	12	35	6	-72	10	20	3000	E	T4
50 VDC at 85°C 30 VDC at 125°C													
TWAA686*050□BSZ0000	93026- 37□	68	50	1.5	1	5	35	-25	8	15	1050	A	T1
TWAB227*050□BSZ0000	93026- 38□	220	50	0.9	2	10	17.5	-50	8	15	1800	B	T2
TWAD477*050□BSZ0000	93026- 39□	470	50	0.75	3	25	10	-50	8	15	2100	D	T3
TWAE687*050□BSZ0000	93026- 40□	680	50	0.7	5	40	8	-58	10	20	2750	E	T4
60 VDC at 85°C 40 VDC at 125°C													
TWAA476*060□BSZ0000	93026- 41□	47	60	2	1	5	44	-25	8	12	1050	A	T1
TWAB157*060□BSZ0000	93026- 42□	150	60	1.1	2	10	20	-40	8	15	1650	B	T2
TWAD397*060□BSZ0000	93026- 43□	390	60	0.9	3	25	15	-60	8	15	2100	D	T3
TWAE567*060□BSZ0000	93026- 44□	560	60	0.8	5	40	10	-58	8	15	2750	E	T4
TWAE108*060□BSZ0000	93026- 65□	1000	60	1	12	90	20	-90	30	50	3200	E	T4
75 VDC at 85°C 50 VDC at 125°C													
TWAA336*075□BSZ0000	93026- 45□	33	75	2.5	1	5	66	-25	5	9	1050	A	T1
TWAB117*075□BSZ0000	93026- 46□	110	75	1.3	2	10	24	-35	6	10	1650	B	T2
TWAD337*075□BSZ0000	93026- 47□	330	75	1	3	30	12	-45	6	10	2100	D	T3
TWAE477*075□BSZ0000	93026- 48□	470	75	0.9	5	50	12	-55	6	10	2750	E	T4
100 VDC at 85°C 65 VDC at 125°C													
TWAA156*100□BSZ0000	93026- 49□	15	100	3.5	1	5	125	-18	3	10	1050	A	T1
TWAB686*100□BSZ0000	93026- 50□	68	100	2.1	2	10	37	-30	4	12	1650	B	T2
TWAD157*100□BSZ0000	93026- 51□	150	100	1.6	3	25	22	-35	6	12	2100	D	T3
TWAE227*100□BSZ0000	93026- 52□	220	100	1.2	5	50	15	-40	6	12	2750	E	T4
125 VDC at 85°C 85 VDC at 125°C													
TWAA106*125□BSZ0000	93026- 53□	10	125	5.5	1	5	175	-15	3	10	1050	A	T1
TWAB476*125□BSZ0000	93026- 54□	47	125	2.3	2	10	47	-25	5	12	1650	B	T2
TWAD107*125□BSZ0000	93026- 55□	100	125	1.8	3	25	35	-35	5	12	2100	D	T3
TWAE157*125□BSZ0000	93026- 56□	150	125	1.6	5	50	20	-35	6	12	2750	E	T4

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V. DCL is measured at rated voltage after 5 minutes.

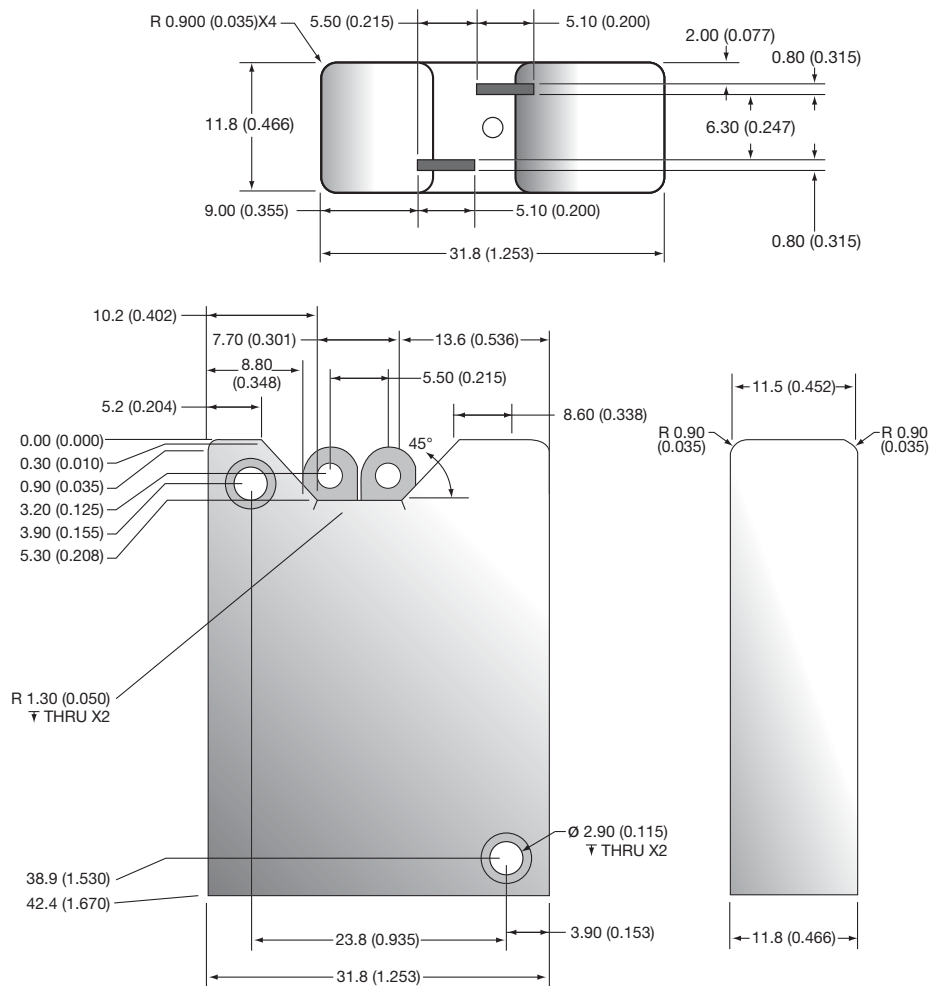
NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.



AVX modular packaged
93026 qualified capacitors.

Capacitance Range: 200uF to 6600uF
Voltage Range: 25 to 125V
Temperature Range: -55°C to 125 °C
Tolerance Range: 10%, 20%

DIMENSIONS: millimeters (inches)

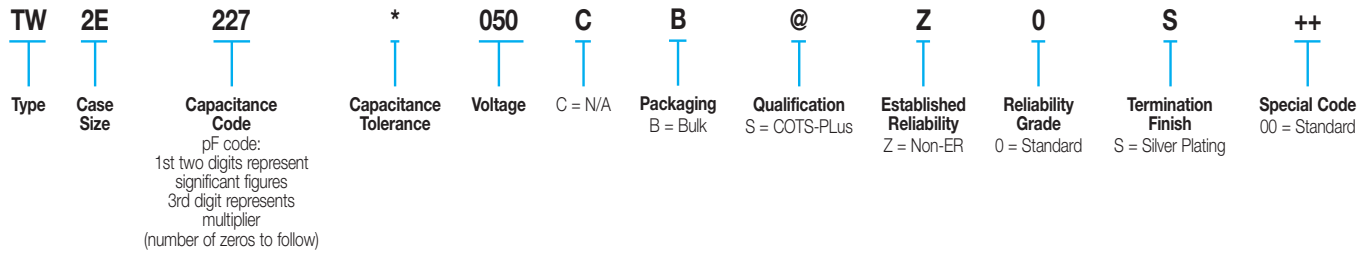


VOLTAGE RATINGS (Operating Temperature -55°C to 125°C)

Voltage (DC)		25	30	50	60	75	100	125
Rated Voltage: (Ur)	85°C	25	30	50	60	75	100	125
Derated Voltage: (Uc)	125°C	15	20	30	40	50	65	85
Surge Voltage: (Us)	85°C	28.8	34.5	57.5	69	86.3	115	144

HOW TO ORDER

AVX PART NUMBER:



SnPb termination option is not RoHS compliant.

RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage^{1/2/}

Frequency of Applied Ripple Current	120Hz				800Hz				1kHz				
	≤55	85	105	125	≤55	85	105	125	≤55	85	105	125	
% of 85°C	100%	0.60	0.39	-	-	0.71	0.43	-	-	0.72	0.45	-	-
Rated Peak Voltage	90%	0.60	0.46	-	-	0.71	0.55	-	-	0.72	0.55	-	-
	80%	0.60	0.52	0.35	-	0.71	0.62	0.42	-	0.72	0.62	0.42	-
	70%	0.60	0.58	0.44	-	0.71	0.69	0.52	-	0.72	0.70	0.52	-
	66-2/3%	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32

Frequency of Applied Ripple Current	10kHz				40kHz				100kHz				
	≤55	85	105	125	≤55	85	105	125	≤55	85	105	125	
% of 85°C	100%	0.88	0.55	-	-	1.00	0.63	-	-	1.10	0.69	-	-
Rated Peak Voltage	90%	0.88	0.67	-	-	1.00	0.77	-	-	1.10	0.85	-	-
	80%	0.88	0.76	0.52	-	1.00	0.87	0.59	-	1.10	0.96	0.65	-
	70%	0.88	0.85	0.64	-	1.00	0.97	0.73	-	1.10	1.07	0.80	-
	66-2/3%	0.88	0.88	0.68	0.40	1.00	1.00	0.77	0.45	1.10	1.10	0.85	0.50

1/ At 125°C the rated voltage of the capacitors decreases to 66 2/3 of the 85°C rated voltage.

2/ The peak of the applied ac ripple voltage plus the applied dc voltage must not exceed the dc voltage rating of the capacitors.

RATINGS & PART NUMBER REFERENCE

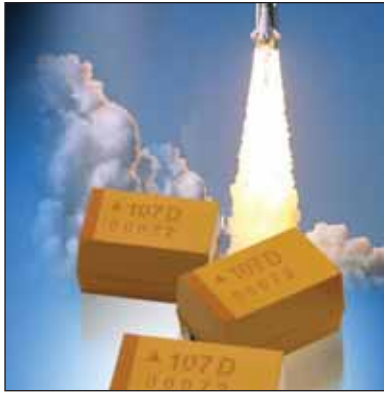
AVX Part Number	Cap (uF)	DC Rated Voltage (V)	ESR Max (ohms)	DC Leakage Max (uA)		Max Impedance (Ohms)	Maximum Capacitance Change* (%)			Max AC Ripple* (mA rms)
	25°C at 120Hz	85°C	120Hz	+25°C	+85 and 125°C	-55°C at 120 Hz	-55°C	+85°C	125°C	85°C at 40kHz
TW2D248*025CB@Z0S++	2400	25	0.33	10	40	3.50	-70	12	18	5200
TW3D368*025CB@Z0S++	3600	25	0.22	15	60	2.33	-70	12	18	7800
TW2E368*025CB@Z0S++	3600	25	0.25	12	50	3.50	-75	12	20	6200
TW2E448*025CB@Z0S++	4400	25	0.25	20	160	5.00	-90	30	50	6400
TW3E548*025CB@Z0S++	5400	25	0.17	18	75	2.33	-75	12	20	9300
TW3E668*025CB@Z0S++	6600	25	0.17	30	240	3.33	-90	30	50	9600
TW2D208*030CB@Z0S++	2000	30	0.35	14	50	3.50	-70	10	18	5000
TW3D308*030CB@Z0S++	3000	30	0.23	21	75	2.33	-70	10	18	7500
TW2E308*030CB@Z0S++	3000	30	0.30	24	70	3.00	-72	10	20	6000
TW3E458*030CB@Z0S++	4500	30	0.20	36	105	2.00	-72	10	20	9000
TW2D947*050CB@Z0S++	940	50	0.38	6	50	5.00	-50	8	15	4200
TW2E148*050CB@Z0S++	1360	50	0.35	10	80	4.00	-58	10	20	5500
TW3D148*050CB@Z0S++	1410	50	0.25	9	75	3.33	-50	8	15	6300
TW3E208*050CB@Z0S++	2040	50	0.23	15	120	2.67	-58	10	20	8250
TW2E308*050CB@Z0S++	3000	50	0.50	38	200	7.50	-90	25	35	6000
TW3E458*050CB@Z0S++	4500	50	0.33	57	300	5.00	-90	25	35	9000
TW2D787*060CB@Z0S++	780	60	0.45	6	50	7.50	-60	8	15	4200
TW2E118*060CB@Z0S++	1120	60	0.40	10	80	5.00	-58	8	15	5500
TW3D128*060CB@Z0S++	1170	60	0.30	9	75	5.00	-60	8	15	6300
TW3E178*060CB@Z0S++	1680	60	0.27	15	120	3.33	-58	8	15	8250
TW2E208*060CB@Z0S++	2000	60	0.50	24	180	10.00	-90	30	50	6400
TW3E308*060CB@Z0S++	3000	60	0.33	36	270	6.67	-90	30	50	9600
TW2D667*075CB@Z0S++	660	75	0.50	6	60	6.00	-45	6	10	4200
TW2E947*075CB@Z0S++	940	75	0.45	10	100	6.00	-55	6	10	5500
TW3D997*075CB@Z0S++	990	75	0.33	9	90	4.00	-45	6	10	6300
TW3E148*075CB@Z0S++	1410	75	0.30	15	150	4.00	-55	6	10	8250
TW2D307*100CB@Z0S++	300	100	0.80	6	50	11.00	-35	6	12	4200
TW2E447*100CB@Z0S++	440	100	0.60	10	100	7.50	-40	6	12	5500
TW3D457*100CB@Z0S++	450	100	0.53	9	75	7.33	-35	6	12	6300
TW3E667*100CB@Z0S++	660	100	0.40	15	150	5.00	-40	6	12	8250
TW2D207*125CB@Z0S++	200	125	0.90	6	50	17.50	-35	5	12	4200
TW3D307*125CB@Z0S++	300	125	0.60	9	75	11.67	-35	5	12	6300
TW2E307*125CB@Z0S++	300	125	0.80	10	100	10.00	-35	6	12	5500
TW3E457*125CB@Z0S++	450	125	0.53	15	150	6.67	-35	6	12	8250

*For reference only, contact factory for more details

TAJ ESCC Tantalum Capacitors



SMD Solid Tantalum Chip Capacitors



Capacitors, Fixed, Leadless Surface Mount, Chip, Solid electrolyte Tantalum for use in ESCC space programs, according to ESCC Generic Specification

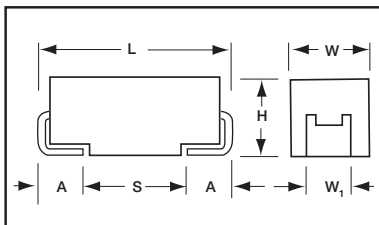
3012 and associated Detail Specification 3012/001 as recommended by the Space Components Coordination Group (ranges in table below).



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	Variant	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	01	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	3528-21	02	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032-28	13	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	14	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	7343-43	17	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.



HOW TO ORDER

AVX PART NUMBER:

TAJ	A	475	K	010	ESA	*
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Tolerance K = ±10%	Rated DC Voltage 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	ESCC Suffix	Please contact manufacturer for details on LAT, and other requirements.

ESCC PART NUMBER – MANDATORY FOR ORDERING:

3012 001	01	C	226	V	K
Detail Specification	Variant Basic Specification ESCC 23500	Testing Level C or B	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Voltage G = 4V J = 6.3V A = 10V C = 16V D = 20V E = 25V V = 35V T = 50V	Tolerance K = ±10%



TAJ ESCC Tantalum Capacitors



SMD Solid Tantalum Chip Capacitors

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) at 85°C							
μF	Code	4V	6.3V	10V	16V	20V	25V	35V	50V
0.1	104							A	A
0.15	154							A	B
0.22	224							A	B
0.33	334							A	B
0.47	474						A	A/B	C
0.68	684					A	A	A/B	C
1	105				A	A	A	B	C
1.5	155			A	A	A	B	B/C	D
2.2	225		A	A	A/B	B	B	B/C	D
3.3	335	A	A	A	A/B	B	B/C	C	D
4.7	475	A	A	A/B	B	B/C	C	C/D	D
6.8	685	A	A/B	B	B/C	C	C/D	D	
10	106	A/B	B	B/C	C	C	C/D	D	
15	156	B	B/C	C	C	C/D	D	D	
22	226	B/C	C	C	C/D	D	D	E	
33	336	C	C	C/D	D	D	E		
47	476	C/D	C/D	D	D	E			
68	686	C/D	D	D	D	E			
100	107	D	D	D	E				
150	157	D	D	E					
220	227	E	E	E					

LAT TESTING

AVX can perform the following Lot Acceptance Test according to ESCC

- LAT 3 Qty. 10 pcs. - 4 pieces of which are “destructive samples”, the remaining 6 pieces may be for part of the Order Qty. OR be additional to the order Qty.
- LAT 2 Qty. 26 pcs. - including the 10 pieces of LAT3. The additional 16 pieces are “destructive samples”.
- LAT 1 Qty. 34 pcs. - including the 26 pieces of LAT2. The additional 8 pieces are all “destructive samples”.

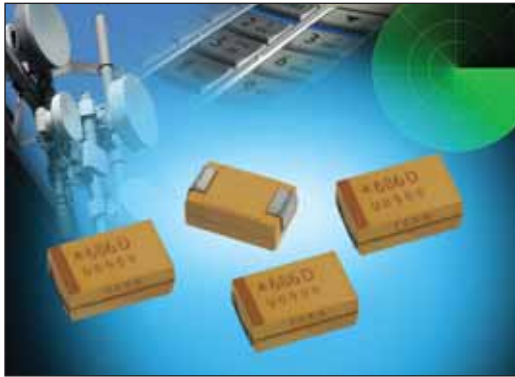
OPTION

Packaging: Tape and reel available on request – Contact marketing.

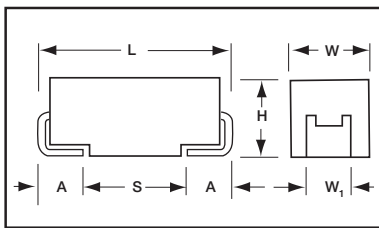
TAJ CECC Tantalum Capacitors



SMD Solid Tantalum Chip Capacitors



Capacitors, Fixed, Leadless Surface Mount, Chip, Solid electrolyte Tantalum for use in avionics and industrial applications, tested to CECC Specification 30801-005 and 30801-011 (CTC4).



CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	Variant	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	3216-18	01&11	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	3528-21	02&12	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	6032-28	03&13	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	7343-31	04&14	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

TAJ

Type

A

Case Size
See table above

475

Capacitance Code
pF code:
1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)

K

Tolerance
K = ±10%

010

Rated DC Voltage
006 = 6.3Vdc
010 = 10Vdc
016 = 16Vdc
020 = 20Vdc
025 = 25Vdc
035 = 35Vdc
050 = 50Vdc

R

Termination Finish
R = 7" T/R 100% Tin
S = 13" T/R 100% Tin
A = Gold Plating 7" Reel
B = Gold Plating 13" Reel
H = Tin Lead 7" Reel
K = Tin Lead 13" Reel

FJ

Suffix
FJ = CECC 30801-011(CTC4)
Y = CECC 30801-005



TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C								
Capacitance Range:	0.1 µF to 100 µF								
Capacitance Tolerance:	±10%; ±20%								
Rated Voltage DC (V _R)	≤+85°C:	6.3	10	16	20	25	35	50	
Category Voltage (V _C)	≤+125°C:	4	7	10	13	17	23	33	
Surge Voltage (V _S)	≤+85°C:	8	13	20	26	32	46	65	
Surge Voltage (V _S)	≤+125°C:	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C								
Reliability:	1% per 1000 hours at 85°C, V _R with 0.1Ω/V series Impedance, 60% confidence level								



TAJ CECC Tantalum Capacitors



SMD Solid Tantalum Chip Capacitors

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

BS CECC30801-005

Capacitance		Rated Voltage DC (V_R) at 85°C						
μF	Code	6.3V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.1	104						A	A
0.15	154						A	A/B
0.22	224						A	A/B
0.33	334						A	B
0.47	474					A	A/B	C
0.68	684				A	A	A/B	C
1	105			A	A	A	B	C
1.5	155		A	A	A	A/B	B/C	D
2.2	225	A	A	A/B	B	B	B/C	D
3.3	335	A	A	A/B	B	B/C	C/D	D
4.7	475	A	A/B	B/C	B/C	C	C/D	D
6.8	685	A/B	B	B/C	C/D	C/D	D	D
10	106	A/B	B/C	B/C/D	C	C/D	D	
15	156	B/C	B/C/D	C	C/D	D	D	
22	226	B/C/D	C	C/D	D	D		
33	336	C	C/D	D	D			
47	476	C/D	D	D				
68	686	C/D	D	D				
100	107	D	D					
150	157							
220	227							

BS CECC30801-011 (CTC4)

Capacitance		Rated Voltage DC (V_R) at 85°C						
μF	Code	6.3V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.1	104						A	A
0.15	154						A	B
0.22	224						A	B
0.33	334						A	B
0.47	474					A	B	C
0.68	684				A		B	C
1	105			A			B	C
1.5	155		A			B	C	D
2.2	225	A			B		C	D
3.3	335			B			C	D
4.7	475		B			C	D	D
6.8	685	B			C		D	
10	106			C		D	D	
15	156		C		D	D		
22	226	C		D	D			
33	336		D	D				
47	476	D	D					
68	686	D						
100	107							
150	157							
220	227							

NOTE: Voltage ratings are minimum values. AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

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AVX Northwest, WA
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AVX Midwest, IN
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AVX Mid/Pacific, CA
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