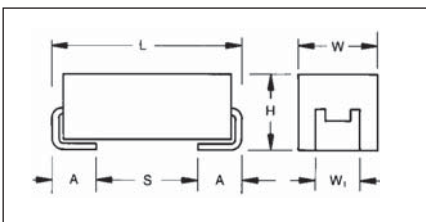


# TAZ Series



## 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.

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 ASTM E-595.

For moisture sensitivity levels please refer to the High Reliability Tantalum MSL section located in the back of the High Reliability Tantalum Catalog.

### 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 <sub>t</sub> )	Term. Length (A) +0.25/-0.13 (+0.010/-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)	0.335
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

### CWR09 MIL-PRF-55365/4

### CAPACITANCE AND RATED VOLTAGE, V<sub>R</sub> (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V <sub>R</sub> ) 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	R		R		A	A	B	B
0.47	474			R		A	B	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		
15	156	E		F	G	G	H		
22	226		F		G	H			
33	336	F		G	H				
47	476		G	H					
68	686	G	H						
100	107	H							



### 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	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 7 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. Z = Non-ER	Qualification Level 0 = N/A T = T Level 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

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
 RoHS COMPLIANT  
 For RoHS compliant products, please select correct termination style.

#### 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	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	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 7 for additional packaging options.

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
 RoHS COMPLIANT  
 For RoHS compliant products, please select correct termination style.

#### 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	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 7 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 45 = 10 cycles, -55°C & +85°C before Weibull

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
 RoHS COMPLIANT  
 For RoHS compliant products, please select correct termination style.

\*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:	0.10 µF to 100 µF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage (V <sub>R</sub> )	≤ 85°C:	4	6	10	15	20	25	35	50	
Category Voltage (V <sub>C</sub> )	≤ 125°C:	2.7	4	6.7	10	13.3	16.7	23.3	33.3	
Surge Voltage (V <sub>S</sub> )	≤ 85°C:	5.3	8	13.3	20	26.7	33.3	46.7	66.7	
Surge Voltage (V <sub>S</sub> )	≤ 125°C:	3.5	5.3	8.7	13.3	17.8	22.2	31.1	44.5	
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									Power Dissipation W	25°C Ripple A (100kHz)	Typical 8 Ri (10
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
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 (%)	+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	
	TAZ R 225 * 004 C □ # @ 0 ^ ++		R	2.2	4	12	1	10	12	6	8	8	0.030	0.05	
	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	
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	
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	
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	
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	
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	
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	
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	
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	0.050	0.08	
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	
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	
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	
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	
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	
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	
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	
	TAZ R 334 * 010 C □ # @ 0 ^ ++		R	0.33	10	50	1	10	12	6	8	8	0.030	0.02	
	TAZ R 474 * 010 C □ # @ 0 ^ ++		R	0.47	10	50	1	10	12	6	8	8	0.030	0.02	
	TAZ R 105 * 010 C □ # @ 0 ^ ++		R	1	10	10	1	10	12	6	8	8	0.030	0.05	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	0.30	
CWR09K^156^@+	TAZ H 156 * 025 C □ # @ 0 ^ ++	TAZ H 156 * 025 C □ L @ 9 ^ ++	H	15	25	1	4	40	48	6	8	8	0.150	0.39	

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

**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

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

RATING & PART NUMBER REFERENCE				Parametric Specifications by Rating per MIL-PRF-55365/4									Power Dissipation W	25°C Ripple A (100kHz)	Type 8 Ri (10
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
							+25°C (μA)	+85°C (μA)	+125°C (μA)	+25°C (%)	+(85/125)°C (%)	-55°C (%)			
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C
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	C

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

**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



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.

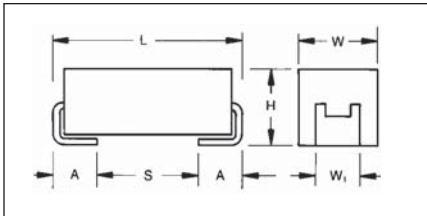
The four smaller cases are characterized by their low profile construction, with the A case being the world's smallest molded military tantalum chip.

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 outgassing requirements of ASTM E-595.

For moisture sensitivity levels please refer to the High Reliability Tantalum MSL section located in the back of the High Reliability Tantalum Catalog.



### MARKING

(White marking on black body)



**Polarity Stripe (+)**

**Capacitance Code**  
**Rated Voltage**

### 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 <sub>1</sub> )	Term. Length (A) +0.25/-0.13 (+0.010/-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)	0.335
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<sub>R</sub> (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage DC (V <sub>R</sub> ) at 85°C						
µF	Code	4V (C)	6V (D)	10V (F)	15V (H)	20V (J)	25V (K)	35V (M)
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):

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

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

#### CWR19 P/N CROSS REFERENCE:

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

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

#### SPACE LEVEL OPTIONS TO SRC9000\*:

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

LEAD-FREE LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

\*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 <sub>R</sub> )	≤ 85°C:	4	6	10	15	20	25	35	
Category Voltage (V <sub>C</sub> )	≤ 125°C:	2.7	4	6.7	10	13.3	16.7	23.3	
Surge Voltage (V <sub>S</sub> )	≤ 85°C:	5.3	8	13.3	20	26.7	33.3	46.7	
Surge Voltage (V <sub>S</sub> )	≤ 125°C:	3.5	5.3	8.7	13.3	17.8	22.2	31.1	
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									Power Dissipation W	25°C Ripple A (100kHz)	Typical Ripple A (100kHz)
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
CWR19D^686^@F+□	TAZ F 686 * 006 C □ # @ 0 ^ ++	TAZ F 686 * 006 C □ L @ 9 ^ ++	F	68	6	1.5	4	40	48	10	12	12	0.100	0.26	0
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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

**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										Power Dissipation W	25°C Ripple A (100kHz)	Typical 8 Ri
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max						
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 (%)				
CWR19A105* <sup>+</sup> 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	
CWR19A155* <sup>+</sup> 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	
CWR19A225* <sup>+</sup> 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	
CWR19A335* <sup>+</sup> 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	
CWR19A475* <sup>+</sup> 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	
CWR19A475* <sup>+</sup> 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	
CWR19A475* <sup>+</sup> 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	
CWR19A685* <sup>+</sup> 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	
CWR19A106* <sup>+</sup> 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	
CWR19A685* <sup>+</sup> 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	
CWR19A106* <sup>+</sup> 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	
CWR19A156* <sup>+</sup> 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	
CWR19A156* <sup>+</sup> 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	
CWR19A226* <sup>+</sup> 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	
CWR19A336* <sup>+</sup> 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	
CWR19A336* <sup>+</sup> 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	
CWR19A476* <sup>+</sup> 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	
CWR19A686* <sup>+</sup> 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	
CWR19A476* <sup>+</sup> 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	
CWR19A686* <sup>+</sup> 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	
CWR19A107* <sup>+</sup> 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	
CWR19A684* <sup>+</sup> 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	
CWR19A105* <sup>+</sup> 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	
CWR19A155* <sup>+</sup> 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	
CWR19A225* <sup>+</sup> 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	
CWR19A335* <sup>+</sup> 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	
CWR19A475* <sup>+</sup> 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	
CWR19A685* <sup>+</sup> 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	
CWR19A106* <sup>+</sup> 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	
CWR19A106* <sup>+</sup> 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	
CWR19A156* <sup>+</sup> 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	
CWR19A226* <sup>+</sup> 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	
CWR19A336* <sup>+</sup> 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	
CWR19A476* <sup>+</sup> 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	
CWR19A476* <sup>+</sup> 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	
CWR19A474* <sup>+</sup> 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	
CWR19A105* <sup>+</sup> 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	
CWR19A225* <sup>+</sup> 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	
CWR19A335* <sup>+</sup> 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	
CWR19A685* <sup>+</sup> 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	
CWR19A156* <sup>+</sup> 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	
CWR19A226* <sup>+</sup> 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	
CWR19A226* <sup>+</sup> 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	
CWR19A336* <sup>+</sup> 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	
CWR19A334* <sup>+</sup> 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	
CWR19A685* <sup>+</sup> 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	
CWR19A106* <sup>+</sup> 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	

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

**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.**

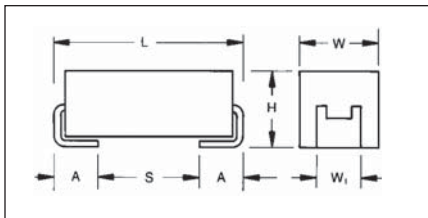




# TAZ Series



## 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 outgassing requirements of ASTM E-595.

For moisture sensitivity levels please refer to the High Reliability Tantalum MSL section located in the back of the High Reliability Tantalum Catalog.

### 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 <sub>t</sub> )	Term. Length (A) +0.25/-0.13 (+0.010/-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)	0.335
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<sub>R</sub> (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated voltage DC (V <sub>R</sub> ) 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	B	C
0.68	684				A	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	D/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						



# TAZ Series



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

### 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 7 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. Z = Non-ER	Qualification Level 0 = N/A T = T Level 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

LEAD-FREE  
LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

#### 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 TR = 7" T&R TR13 = 13" T&R W = Waffle  See page 7 for additional packaging options.

LEAD-FREE  
LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

#### 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 7 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 45 = 10 cycles, -55°C & +85°C before Weibull

LEAD-FREE  
LEAD-FREE COMPATIBLE COMPONENT  
RoHS COMPLIANT  
For RoHS compliant products, please select correct termination style.

\*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:	0.10 µF to 330 µF									
Capacitance Tolerance:	±5%; ±10%; ±20%									
Rated Voltage (V <sub>R</sub> )	≤ 85°C:	4	6	10	15	20	25	35	50	
Category Voltage (V <sub>C</sub> )	≤ 125°C:	2.7	4	6.7	10	13.3	16.7	23.3	33.3	
Surge Voltage (V <sub>S</sub> )	≤ 85°C:	5.3	8	13.3	20	26.7	33.3	46.7	66.7	
Surge Voltage (V <sub>S</sub> )	≤ 125°C:	3.5	5.3	8.7	13.3	17.8	22.2	31.1	44.5	
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									Power Dissipation W	25°C Ripple A (100kHz)	Typical 8 Ri
				Cap @ 120Hz μF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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

**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									Power Dissipation W	25°C Ripple A (100kHz)	Typical 8 Ri
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
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 (%)			
CWR29F475D+	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
CWR29F685B+	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
CWR29F685C+	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
CWR29F685D+	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
CWR29F685E+	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
CWR29F106B+	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
CWR29F106C+	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
CWR29F106D+	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
CWR29F106E+	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
CWR29F156D+	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
CWR29F156E+	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
CWR29F156F+	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
CWR29F226E+	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
CWR29F336F+	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
CWR29F336G+	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
CWR29F476F+	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
CWR29F476G+	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
CWR29F476H+	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
CWR29F686G+	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
CWR29F107G+	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
CWR29F107H+	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
CWR29F157H+	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
CWR29F157X+	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
CWR29F227H+	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
CWR29H684A+	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
CWR29H105A+	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
CWR29H155A+	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
CWR29H155B+	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
CWR29H225A+	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
CWR29H225C+	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
CWR29H335B+	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
CWR29H335D+	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
CWR29H475B+	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
CWR29H475C+	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
CWR29H475D+	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
CWR29H475E+	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
CWR29H685D+	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
CWR29H685E+	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
CWR29H106D+	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
CWR29H106E+	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
CWR29H106F+	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
CWR29H156E+	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
CWR29H156F+	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
CWR29H226F+	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
CWR29H226G+	TAZ G 226 * 015 L □ # @ 0 ^ ++	TAZ G 226 * 015 LL @ 9 ^ ++	G	22	15	0.275	4	226	48	6	8	8	0.125	0.67	0
CWR29H336F+	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
CWR29H336G+	TAZ G 336 * 015 L □ # @ 0 ^ ++	TAZ G 336 * 015 LL @ 9 ^ ++	G	33	15	0.275	6	336	72	8	10	10	0.125	0.67	0
CWR29H336H+	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
CWR29H476G+	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
CWR29H476H+	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
CWR29H686G+	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
CWR29H686H+	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
CWR29H107H+	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
CWR29J474A+	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
CWR29J684A+	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

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

**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									Power Dissipation W	25°C Ripple A (100kHz)	Typical Ripple (100kHz)
				Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz Ohms @ +25°C	DCL max			DF Max					
							+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	0.68	20	5.6	1	10	12	6	8	8	0.070	0.11	0.14
CWR29J <sup>1</sup> 684 <sup>1</sup> @B+□	TAZ B 684 * 020 L □ # @ 0 ^ ++	TAZ B 684 * 020 LL @ 9 ^ ++	B	1	20	7.5	1	10	12	6	8	8	0.050	0.08	0.10
CWR29J <sup>1</sup> 105 <sup>1</sup> @A+□	TAZ A 105 * 020 L □ # @ 0 ^ ++	TAZ A 105 * 020 LL @ 9 ^ ++	A	1	20	4.8	1	10	12	6	8	8	0.070	0.12	0.14
CWR29J <sup>1</sup> 105 <sup>1</sup> @B+□	TAZ B 105 * 020 L □ # @ 0 ^ ++	TAZ B 105 * 020 LL @ 9 ^ ++	B	1.5	20	3.6	1	10	12	6	8	8	0.070	0.14	0.14
CWR29J <sup>1</sup> 155 <sup>1</sup> @B+□	TAZ B 155 * 020 L □ # @ 0 ^ ++	TAZ B 155 * 020 LL @ 9 ^ ++	B	1.5	20	2.4	1	10	12	6	8	8	0.075	0.18	0.14
CWR29J <sup>1</sup> 155 <sup>1</sup> @C+□	TAZ C 155 * 020 L □ # @ 0 ^ ++	TAZ C 155 * 020 LL @ 9 ^ ++	C	2.2	20	3.6	1	10	12	6	8	8	0.070	0.14	0.14
CWR29J <sup>1</sup> 225 <sup>1</sup> @B+□	TAZ B 225 * 020 L □ # @ 0 ^ ++	TAZ B 225 * 020 LL @ 9 ^ ++	B	2.2	20	1.7	1	10	12	6	8	8	0.080	0.22	0.14
CWR29J <sup>1</sup> 225 <sup>1</sup> @D+□	TAZ D 225 * 020 L □ # @ 0 ^ ++	TAZ D 225 * 020 LL @ 9 ^ ++	D	3.3	20	2	1	10	12	6	8	8	0.080	0.20	0.14
CWR29J <sup>1</sup> 335 <sup>1</sup> @D+□	TAZ D 335 * 020 L □ # @ 0 ^ ++	TAZ D 335 * 020 LL @ 9 ^ ++	D	3.3	20	1.2	1	10	12	6	8	8	0.090	0.27	0.14
CWR29J <sup>1</sup> 335 <sup>1</sup> @E+□	TAZ E 335 * 020 L □ # @ 0 ^ ++	TAZ E 335 * 020 LL @ 9 ^ ++	E	4.7	20	1.7	1	10	12	6	8	8	0.090	0.23	0.14
CWR29J <sup>1</sup> 475 <sup>1</sup> @E+□	TAZ E 475 * 020 L □ # @ 0 ^ ++	TAZ E 475 * 020 LL @ 9 ^ ++	E	6.8	20	1.5	2	20	24	6	8	8	0.090	0.24	0.14
CWR29J <sup>1</sup> 685 <sup>1</sup> @E+□	TAZ E 685 * 020 L □ # @ 0 ^ ++	TAZ E 685 * 020 LL @ 9 ^ ++	E	6.8	20	0.7	2	20	24	6	8	8	0.100	0.38	0.14
CWR29J <sup>1</sup> 685 <sup>1</sup> @F+□	TAZ F 685 * 020 L □ # @ 0 ^ ++	TAZ F 685 * 020 LL @ 9 ^ ++	F	10	20	1.5	2	20	24	6	8	8	0.090	0.24	0.14
CWR29J <sup>1</sup> 106 <sup>1</sup> @F+□	TAZ F 106 * 020 L □ # @ 0 ^ ++	TAZ F 106 * 020 LL @ 9 ^ ++	F	10	20	0.8	2	20	24	6	8	8	0.100	0.35	0.14
CWR29J <sup>1</sup> 156 <sup>1</sup> @F+□	TAZ F 156 * 020 L □ # @ 0 ^ ++	TAZ F 156 * 020 LL @ 9 ^ ++	F	15	20	0.8	3	30	36	6	8	8	0.100	0.35	0.14
CWR29J <sup>1</sup> 156 <sup>1</sup> @G+□	TAZ G 156 * 020 L □ # @ 0 ^ ++	TAZ G 156 * 020 LL @ 9 ^ ++	G	22	20	0.625	4	40	48	6	8	8	0.125	0.67	0.14
CWR29J <sup>1</sup> 226 <sup>1</sup> @G+□	TAZ G 226 * 020 L □ # @ 0 ^ ++	TAZ G 226 * 020 LL @ 9 ^ ++	G	22	20	0.18	4	40	48	6	8	8	0.150	0.91	0.14
CWR29J <sup>1</sup> 226 <sup>1</sup> @H+□	TAZ H 226 * 020 L □ # @ 0 ^ ++	TAZ H 226 * 020 LL @ 9 ^ ++	H	33	20	0.18	6	60	72	8	10	10	0.150	0.91	0.14
CWR29J <sup>1</sup> 336 <sup>1</sup> @H+□	TAZ H 336 * 020 L □ # @ 0 ^ ++	TAZ H 336 * 020 LL @ 9 ^ ++	H	47	20	0.18	10	100	120	8	10	10	0.150	0.91	0.14
CWR29J <sup>1</sup> 476 <sup>1</sup> @H+□	TAZ H 476 * 020 L □ # @ 0 ^ ++	TAZ H 476 * 020 LL @ 9 ^ ++	H	47	20	0.11	10	100	120	8	10	10	0.200	1.35	0.14
CWR29J <sup>1</sup> 476 <sup>1</sup> @X+□	TAZ X 476 * 020 L □ # @ 0 ^ ++	TAZ X 476 * 020 LL @ 9 ^ ++	X	0.33	25	7.5	1	10	12	6	8	8	0.050	0.08	0.14
CWR29K <sup>1</sup> 334 <sup>1</sup> @A+□	TAZ A 334 * 025 L □ # @ 0 ^ ++	TAZ A 334 * 025 LL @ 9 ^ ++	A	0.47	25	7.5	1	10	12	6	8	8	0.050	0.08	0.14
CWR29K <sup>1</sup> 474 <sup>1</sup> @A+□	TAZ A 474 * 025 L □ # @ 0 ^ ++	TAZ A 474 * 025 LL @ 9 ^ ++	A	0.68	25	4	1	10	12	6	8	8	0.070	0.13	0.14
CWR29K <sup>1</sup> 684 <sup>1</sup> @B+□	TAZ B 684 * 025 L □ # @ 0 ^ ++	TAZ B 684 * 025 LL @ 9 ^ ++	B	1	25	4	1	10	12	6	8	8	0.070	0.13	0.14
CWR29K <sup>1</sup> 105 <sup>1</sup> @B+□	TAZ B 105 * 025 L □ # @ 0 ^ ++	TAZ B 105 * 025 LL @ 9 ^ ++	B	1	25	2.6	1	10	12	6	8	8	0.075	0.17	0.14
CWR29K <sup>1</sup> 105 <sup>1</sup> @C+□	TAZ C 105 * 025 L □ # @ 0 ^ ++	TAZ C 105 * 025 LL @ 9 ^ ++	C	1.5	25	1.7	1	10	12	6	8	8	0.080	0.22	0.14
CWR29K <sup>1</sup> 155 <sup>1</sup> @D+□	TAZ D 155 * 025 L □ # @ 0 ^ ++	TAZ D 155 * 025 LL @ 9 ^ ++	D	2.2	25	2	1	10	12	6	8	8	0.080	0.20	0.14
CWR29K <sup>1</sup> 225 <sup>1</sup> @D+□	TAZ D 225 * 025 L □ # @ 0 ^ ++	TAZ D 225 * 025 LL @ 9 ^ ++	D	2.2	25	1	1	10	12	6	8	8	0.090	0.30	0.14
CWR29K <sup>1</sup> 225 <sup>1</sup> @E+□	TAZ E 225 * 025 L □ # @ 0 ^ ++	TAZ E 225 * 025 LL @ 9 ^ ++	E	3.3	25	1.2	1	10	12	6	8	8	0.090	0.27	0.14
CWR29K <sup>1</sup> 335 <sup>1</sup> @E+□	TAZ E 335 * 025 L □ # @ 0 ^ ++	TAZ E 335 * 025 LL @ 9 ^ ++	E	4.7	25	0.7	2	20	24	6	8	8	0.100	0.38	0.14
CWR29K <sup>1</sup> 475 <sup>1</sup> @F+□	TAZ F 475 * 025 L □ # @ 0 ^ ++	TAZ F 475 * 025 LL @ 9 ^ ++	F	6.8	25	0.8	2	20	24	6	8	8	0.100	0.35	0.14
CWR29K <sup>1</sup> 685 <sup>1</sup> @F+□	TAZ F 685 * 025 L □ # @ 0 ^ ++	TAZ F 685 * 025 LL @ 9 ^ ++	F	6.8	25	0.3	2	20	24	6	8	8	0.125	0.65	0.14
CWR29K <sup>1</sup> 685 <sup>1</sup> @G+□	TAZ G 685 * 025 L □ # @ 0 ^ ++	TAZ G 685 * 025 LL @ 9 ^ ++	G	10	25	0.35	3	30	36	6	8	8	0.125	0.60	0.14
CWR29K <sup>1</sup> 106 <sup>1</sup> @G+□	TAZ G 106 * 025 L □ # @ 0 ^ ++	TAZ G 106 * 025 LL @ 9 ^ ++	G	15	25	0.35	4	40	48	6	8	8	0.125	0.60	0.14
CWR29K <sup>1</sup> 156 <sup>1</sup> @G+□	TAZ G 156 * 025 L □ # @ 0 ^ ++	TAZ G 156 * 025 LL @ 9 ^ ++	G	15	25	0.2	4	40	48	6	8	8	0.150	0.87	0.14
CWR29K <sup>1</sup> 156 <sup>1</sup> @H+□	TAZ H 156 * 025 L □ # @ 0 ^ ++	TAZ H 156 * 025 LL @ 9 ^ ++	H	22	25	0.18	6	60	72	6	8	8	0.125	0.60	0.14
CWR29K <sup>1</sup> 226 <sup>1</sup> @G+□	TAZ G 226 * 025 L □ # @ 0 ^ ++	TAZ G 226 * 025 LL @ 9 ^ ++	G	22	25	0.18	10	100	120	8	10	10	0.150	0.91	0.14
CWR29K <sup>1</sup> 226 <sup>1</sup> @H+□	TAZ H 226 * 025 L □ # @ 0 ^ ++	TAZ H 226 * 025 LL @ 9 ^ ++	H	33	25	0.18	10	100	120	8	10	10	0.150	0.91	0.14
CWR29K <sup>1</sup> 336 <sup>1</sup> @H+□	TAZ H 336 * 025 L □ # @ 0 ^ ++	TAZ H 336 * 025 LL @ 9 ^ ++	H	47	25	0.18	10	100	120	8	10	10	0.150	0.91	0.14
CWR29M <sup>1</sup> 224 <sup>1</sup> @A+□	TAZ A 224 * 035 L □ # @ 0 ^ ++	TAZ A 224 * 035 LL @ 9 ^ ++	A	0.22	35	12	1	10	12	6	8	8	0.050	0.06	0.14
CWR29M <sup>1</sup> 334 <sup>1</sup> @A+□	TAZ A 334 * 035 L □ # @ 0 ^ ++	TAZ A 334 * 035 LL @ 9 ^ ++	A	0.33	35	12	1	10	12	6	8	8	0.050	0.06	0.14
CWR29M <sup>1</sup> 474 <sup>1</sup> @B+□	TAZ B 474 * 035 L □ # @ 0 ^ ++	TAZ B 474 * 035 LL @ 9 ^ ++	B	0.47	35	6.8	1	10	12	6	8	8	0.070	0.10	0.14
CWR29M <sup>1</sup> 684 <sup>1</sup> @C+□	TAZ C 684 * 035 L □ # @ 0 ^ ++	TAZ C 684 * 035 LL @ 9 ^ ++	C	0.68	35	4	1	10	12	6	8	8	0.075	0.14	0.14
CWR29M <sup>1</sup> 105 <sup>1</sup> @D+□	TAZ D 105 * 035 L □ # @ 0 ^ ++	TAZ D 105 * 035 LL @ 9 ^ ++	D	1	35	2.2	1	10	12	6	8	8	0.080	0.19	0.14
CWR29M <sup>1</sup> 155 <sup>1</sup> @E+□	TAZ E 155 * 035 L □ # @ 0 ^ ++	TAZ E 155 * 035 LL @ 9 ^ ++	E	1.5	35	1.3	1	10	12	6	8	8	0.090	0.26	0.14
CWR29M <sup>1</sup> 335 <sup>1</sup> @F+□	TAZ F 335 * 035 L □ # @ 0 ^ ++	TAZ F 335 * 035 LL @ 9 ^ ++	F	3.3	35	0.7	1	10	12	6	8	8	0.100	0.38	0.14
CWR29M <sup>1</sup> 475 <sup>1</sup> @G+□	TAZ G 475 * 035 L □ # @ 0 ^ ++	TAZ G 475 * 035 LL @ 9 ^ ++	G	4.7	35	0.375	2	20	24	6	8	8	0.125	0.58	0.14
CWR29M <sup>1</sup> 685 <sup>1</sup> @G+□	TAZ G 685 * 035 L □ # @ 0 ^ ++	TAZ G 685 * 035 LL @ 9 ^ ++	G	6.8	35	0.375	3	30	36	6	8	8	0.125	0.58	0.14
CWR29M <sup>1</sup> 685 <sup>1</sup> @H+□	TAZ H 685 * 035 L □ # @ 0 ^ ++	TAZ H 685 * 035 LL @ 9 ^ ++	H	6.8	35	0.5	3	30	36	6	8	8	0.150	0.55	0.14
CWR29M <sup>1</sup> 106 <sup>1</sup> @H+□	TAZ H 106 * 035 L □ # @ 0 ^ ++	TAZ H 106 * 035 LL @ 9 ^ ++	H	10	35	0.5	4	40	48	8	10	10	0.150	0.55	0.14
CWR29N <sup>1</sup> 104 <sup>1</sup> @A+□	TAZ A 104 * 050 L □ # @ 0 ^ ++	TAZ A 104 * 050 LL @ 9 ^ ++	A	0.1	50	12	1	10	12	6	8	8	0.050	0.06	0.14
CWR29N <sup>1</sup> 154 <sup>1</sup> @A+□	TAZ A 154 * 050 L □ # @ 0 ^ ++	TAZ A 154 * 050 LL @ 9 ^ ++	A	0.15	50	12	1	10	12	6	8	8	0.050	0.06	0.14

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

**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									Power Dissipation	25°C Ripple	Type
				Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max					
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)	(100kHz)
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
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
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
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
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
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
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
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
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

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

**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.**



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [avx manufacturer](#):*

Other Similar products are found below :

[MD015A222JAB](#) [M39014/220755](#) [VE17M02750K--](#) [CX2016DB16000D0GPSC1](#) [LIFE\\_SAMP-1A139-159V001](#) [CWR09HC106KBA](#)  
[PBRC7.37MR50X000](#) [M39014/22-1137-TUBE](#) [18123A104FAT2A](#) [M39014/220778](#) [009286001203906](#) [M39014/22-1181](#) [F931A227KNC](#)  
[F931C227MNC](#) [FFLI6B3007KJE](#) [12102U101JAT2A](#) [KIT5000UZ](#) [KITTYPE1400 LF](#) [LD065A332FAB2A](#) [SA205C393JAA](#)  
[308016056000413](#) [SK052C105KAA](#) [SR211A151FAA](#) [F931A226MBA](#) [FFB24I0755K--](#) [CK06BX472K](#) [M39014/05-2731](#) [M39014/220476](#)  
[CWR29JC476KCHC](#) [TAJB225M035R](#) [TAJC107K006RNJ](#) [TAJD226K035RNJV](#) [TCH9107M035W0055U](#) [TLCU336M004XTA](#)  
[TPSA106K016R1000](#) [TPSD337K010R0150](#) [TPSE226K035R0200](#) [TWAE108K030SBEZ0000](#) [TWAE757M060CBEZ0700](#)  
[KC3225K3.68640C1GE00](#) [KC7050K50.0000C10E00](#) [069296700101000](#) [07016-092MCCA](#) [TBJV157K016LBLC0024](#) [TPSE336K035R0250](#)  
[TWAD108M050CBEZ0700](#) [CX2520DB16000H0FLJC1](#) [CDR14BP510EJUR](#) [RM055C825KAL360](#) [CCR05CG220FS](#)