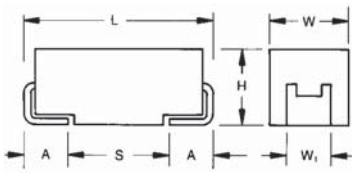
TAZ Series

CWR19 - MIL-PRF-55365/11

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 molded construction is compatible with a wide range of SMT board assembly processes including wave or reflow solder, conductive epoxy or compression bonding techniques. The five smaller cases are characterized by their low profile construction; with the A case being the world's smallest molded military tantalum. There are three termination finishes available: fused solder plated ("K" per MIL-PRF-55365), hot solder dipped ("C") and gold plated ("B"). In addition, the molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and requirements of NASA SP-R-0022A (Outgassing).



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_1)	Term. Length (A) ±0.13 (0.005)	S min
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)	1.80 (0.071)
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)
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)
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)
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)
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)
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)
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)	0.70 (0.028)
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

HOW TO ORDER

CWR19	J	–	225	*	@	D	+	□
Type	**Voltage Code** C = 4Vdc D = 6Vdc F = 10Vdc H = 15Vdc J = 20Vdc K = 25Vdc M = 35Vdc N = 50Vdc	**Termination Finish** K = Fused Solder Plated 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% C = 0.01%/1000 Hrs. conf.) Comm: Z = 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

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							

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								
0.15	154								
0.22	224								
0.33	334							A	
0.47	474						A		C
0.68	684					A		C	
1.0	105				A	A	B/C		
1.5	155				A	B/C			
2.2	225			A	A/C	B	D		
3.3	335	A	A	A/C	B	D	E		
4.7	475	A	A/C	B/C	B/C/D	E			
6.8	685	A/C	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	X	
22	226	B/D	D/E	E	F	G	G/H/X		
33	336	D/E	E	F	F/G	H	H/X		
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	G	H	H					
330	337	H	H						

TAZ Series

CWR19 - MIL-PRF-55365/11

Part Number	Case Size	Cap (nom) (µF)	DC rated voltage (85°C) (volts)	ESR (max) 100 kHz +25°C (ohms)	DC Leakage (max)			Dissipation Factor (max)		
					+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)
CWR19C-335*@A+☐	A	3.3	4	12	1	10	12	6	8	8
CWR19C-475*@A+☐	A	4.7	4	12	1	10	12	6	8	8
CWR19C-685*@A+☐	A	6.8	4	12	1	10	12	6	8	8
CWR19C-685*@C+☐	C	6.8	4	5.5	1	10	12	6	8	8
CWR19C-106*@B+☐	B	10	4	8	1	10	12	8	10	10
CWR19C-156*@B+☐	B	15	4	8	1	10	12	8	10	10
CWR19C-226*@B+☐	B	22	4	8	1	10	12	8	10	10
CWR19C-226*@D+☐	D	22	4	4	1	10	12	8	10	12
CWR19C-336*@D+☐	D	33	4	4	2	20	24	8	10	12
CWR19C-336*@E+☐	E	33	4	3	2	20	24	8	10	12
CWR19C-476*@E+☐	E	47	4	3	2	20	24	8	10	12
CWR19C-686*@E+☐	E	68	4	3	3	30	36	8	10	12
CWR19C-107*@F+☐	F	100	4	2	4	40	48	10	12	12
CWR19C-157*@G+☐	G	150	4	1	6	60	72	10	12	12
CWR19C-227*@H+☐	H	220	4	1	8	80	96	10	12	12
CWR19C-337*@H+☐	H	330	4	0.9	10	100	120	10	12	12
CWR19D-335*@A+☐	A	3.3	6	12	1	10	12	6	8	8
CWR19D-475*@A+☐	A	4.7	6	12	1	10	12	6	8	8
CWR19D-475*@C+☐	C	4.7	6	5.5	1	10	12	6	8	8
CWR19D-685*@B+☐	B	6.8	6	8	1	10	12	6	8	8
CWR19D-106*@B+☐	B	10	6	8	1	10	12	6	8	8
CWR19D-156*@B+☐	B	15	6	8	1	10	12	8	10	10
CWR19D-156*@D+☐	D	15	6	5	1	10	12	8	10	12
CWR19D-156*@E+☐	E	15	6	3	1	10	12	8	10	12
CWR19D-226*@D+☐	D	22	6	5	1	10	12	6	8	8
CWR19D-226*@E+☐	E	22	6	3.5	2	20	24	8	10	12
CWR19D-336*@E+☐	E	33	6	3.5	2	20	24	6	8	8
CWR19D-476*@F+☐	F	47	6	3.5	3	30	36	8	10	12
CWR19D-686*@F+☐	F	68	6	1.5	4	40	48	10	12	12
CWR19D-686*@G+☐	G	68	6	1	4	40	48	10	12	12
CWR19D-107*@G+☐	G	100	6	1.1	6	60	72	10	12	12
CWR19D-157*@G+☐	G	150	6	1.1	10	100	120	10	12	12
CWR19D-227*@H+☐	H	220	6	0.9	10	100	120	10	12	12
CWR19D-337*@H+☐	H	330	6	0.9	20	200	240	10	12	12
CWR19F-225*@A+☐	A	2.2	10	12	1	10	12	6	8	8
CWR19F-335*@A+☐	A	3.3	10	12	1	10	12	6	8	8
CWR19F-335*@C+☐	C	3.3	10	5.5	1	10	12	6	8	8
CWR19F-475*@B+☐	B	4.7	10	8	1	10	12	6	8	8
CWR19F-475*@C+☐	C	4.7	10	5.5	1	10	12	6	8	8
CWR19F-685*@B+☐	B	6.8	10	8	1	10	12	6	8	8
CWR19F-685*@C+☐	C	6.8	10	5.5	1	10	12	6	8	8
CWR19F-685*@D+☐	D	6.8	10	5	1	10	12	6	8	8
CWR19F-106*@B+☐	B	10	10	8	1	10	12	8	10	10

TAZ Series

CWR19 - MIL-PRF-55365/11

Part Number	Case Size	Cap (nom) (µF)	DC rated voltage (85°C) (volts)	ESR (max) 100 kHz +25°C (ohms)	DC Leakage (max)			Dissipation Factor (max)		
					+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)
CWR19F-106*@C+☐	C	10	10	5.5	1	10	12	6	8	8
CWR19F-106*@D+☐	D	10	10	4	1	10	12	6	8	8
CWR19F-106*@E+☐	E	10	10	3.5	1	10	12	6	8	8
CWR19F-156*@D+☐	D	15	10	5	2	20	24	6	8	8
CWR19F-156*@E+☐	E	15	10	3	2	20	24	8	10	10
CWR19F-226*@E+☐	E	22	10	2	3	30	36	8	10	10
CWR19F-336*@F+☐	F	33	10	1.5	3	30	36	8	10	10
CWR19F-476*@F+☐	F	47	10	1.5	4	40	48	10	12	12
CWR19F-476*@G+☐	G	47	10	1	4	40	48	10	12	12
CWR19F-686*@G+☐	G	68	10	1.1	6	60	72	10	12	12
CWR19F-107*@G+☐	G	100	10	1.1	10	100	120	10	12	12
CWR19F-107*@H+☐	H	100	10	0.9	10	100	120	10	12	12
CWR19F-157*@H+☐	H	150	10	0.9	15	150	180	10	12	12
CWR19F-157*@X+☐	X	150	10	0.9	15	150	180	10	12	12
CWR19F-227*@H+☐	H	220	10	0.9	20	200	240	10	12	12
CWR19H-105*@A+☐	A	1	15	15	1	10	12	6	8	8
CWR19H-155*@A+☐	A	1.5	15	15	1	10	12	6	8	8
CWR19H-225*@A+☐	A	2.2	15	15	1	10	12	6	8	8
CWR19H-225*@C+☐	C	2.2	15	5.5	1	10	12	6	8	8
CWR19H-335*@B+☐	B	3.3	15	9	1	10	12	6	8	8
CWR19H-475*@B+☐	B	4.7	15	5	1	10	12	6	8	8
CWR19H-475*@C+☐	C	4.7	15	5.5	1	10	12	6	8	8
CWR19H-475*@D+☐	D	4.7	15	6	1	10	12	6	8	8
CWR19H-685*@D+☐	D	6.8	15	6	1	10	12	6	8	8
CWR19H-685*@E+☐	E	6.8	15	3	1	10	12	8	10	12
CWR19H-106*@D+☐	D	10	15	6	2	20	24	6	8	8
CWR19H-106*@E+☐	E	10	15	4	2	20	24	6	8	8
CWR19H-156*@E+☐	E	15	15	4	2	20	24	6	8	8
CWR19H-156*@F+☐	F	15	15	3	2	20	24	8	10	10
CWR19H-226*@F+☐	F	22	15	3	3	30	36	8	10	10
CWR19H-336*@F+☐	F	33	15	3	5	50	60	6	8	8
CWR19H-336*@G+☐	G	33	15	1.1	6	60	72	8	10	10
CWR19H-476*@G+☐	G	47	15	1.1	10	100	120	8	10	10
CWR19H-476*@H+☐	H	47	15	0.9	10	100	120	8	10	10
CWR19H-686*@G+☐	G	68	15	1.1	10	100	120	8	10	10
CWR19H-686*@H+☐	H	68	15	0.9	10	100	120	8	10	10
CWR19H-107*@H+☐	H	100	15	0.9	15	150	180	10	12	12
CWR19J-684*@A+☐	A	0.68	20	15	1	10	12	6	8	8
CWR19J-105*@A+☐	A	1	20	15	1	10	12	6	8	8
CWR19J-155*@B+☐	B	1.5	20	9	1	10	12	6	8	8
CWR19J-155*@C+☐	C	1.5	20	6	1	10	12	6	8	8
CWR19J-225*@B+☐	B	2.2	20	9	1	10	12	6	8	8
CWR19J-335*@D+☐	D	3.3	20	6	1	10	12	6	8	8

TAZ Series

CWR19 - MIL-PRF-55365/11

Part Number	Case Size	Cap (nom) (µF)	DC rated voltage (85°C) (volts)	ESR (max) 100 kHz +25°C (ohms)	DC Leakage (max)			Dissipation Factor (max)		
					+25°C (µA)	+85°C (µA)	+125°C (µA)	+25°C (%)	+85/125°C (%)	-55°C (%)
CWR19J-475*@E+☐	E	4.7	20	6	1	10	12	6	8	8
CWR19J-685*@E+☐	E	6.8	20	5	2	20	24	6	8	8
CWR19J-106*@E+☐	E	10	20	5	2	20	24	6	8	8
CWR19J-106*@F+☐	F	10	20	3	2	20	24	6	8	8
CWR19J-156*@F+☐	F	15	20	3	3	30	36	6	8	8
CWR19J-226*@G+☐	G	22	20	2.5	4	40	48	6	8	8
CWR19J-336*@H+☐	H	33	20	0.9	6	60	72	8	10	10
CWR19J-476*@H+☐	H	47	20	0.9	10	100	120	8	10	10
CWR19J-476*@X+☐	X	47	20	0.9	10	100	120	8	10	10
CWR19K-474*@A+☐	A	0.47	25	15	1	10	12	6	8	8
CWR19K-105*@B+☐	B	1	25	10	1	10	12	6	8	8
CWR19K-105*@C+☐	C	1	25	6.5	1	10	12	6	8	8
CWR19K-225*@D+☐	D	2.2	25	6	1	10	12	6	8	8
CWR19K-335*@E+☐	E	3.3	25	4	1	10	12	6	8	8
CWR19K-685*@F+☐	F	6.8	25	3	2	20	24	6	8	8
CWR19K-156*@G+☐	G	15	25	1.4	4	40	48	6	8	8
CWR19K-226*@G+☐	G	22	25	1.4	6	60	72	6	8	8
CWR19K-226*@H+☐	H	22	25	0.9	6	60	72	6	8	8
CWR19K-226*@X+☐	X	22	25	0.9	6	60	72	6	8	8
CWR19K-336*@H+☐	H	33	25	0.9	10	100	120	8	10	10
CWR19K-336*@X+☐	X	33	25	0.9	10	100	120	8	10	10
CWR19M-334*@A+☐	A	0.33	35	22	1	10	12	6	8	8
CWR19M-684*@C+☐	C	0.68	35	10	1	10	12	6	8	8
CWR19M-685*@G+☐	G	6.8	35	1.5	3	30	36	6	8	8
CWR19M-106*@H+☐	H	10	35	0.9	4	40	48	8	10	10
CWR19M-156*@X+☐	X	15	35	0.9	6	60	72	6	8	8
CWR19N-474*@C+☐	C	0.47	50	8	1	10	12	6	8	8