

Type 057 105 °C Military Grade, Axial Leaded, Aluminum

Type 057 capacitors are the commercial equivalent to MIL-C-39018/03 (CU17) types and are ideal for high reliability, long life and high temperature applications.



Highlights

- ◆ Long life
- ◆ High Ripple
- ◆ High Temperature

Specifications

Operating Temperature: $-55\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$

Rated Voltage: 6.3 to 250 Vdc

Capacitance: 12 μF to 33,000 μF

Capacitance Tolerance: -10% to 75%

Leakage Current: $\leq 0.002 \text{ CV } \mu\text{A} @ +25^\circ\text{C}$, $\leq 0.012 \text{ CV } \mu\text{A} @ +105^\circ\text{C}$

Ripple Current Multipliers: Ambient Temperature

45 °C	55 °C	65 °C	75 °C	85 °C	95 °C	105 °C
1.62	1.49	1.35	1.19	1.00	0.77	0.43

Frequency

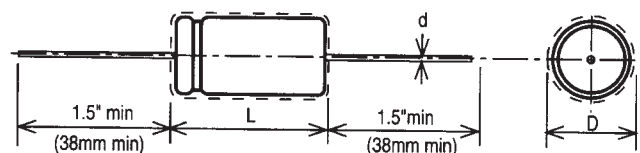
	50 Hz	60 Hz	120 Hz	360 Hz	1 kHz	5 kHz	10 kHz+
0-60 Vdc	0.85	1.00	1.10	1.15	1.15	1.15	1.15
61-200 Vdc	0.83	1.00	1.15	1.20	1.20	1.20	1.20

Load Life: 2,000 h @ +105 °C
 Δ Capacitance $\pm 10\%$
 ESR 125% of limit
 DCL 100% of limit

Shelf Life: 1,000 h @ +105 °C
 Δ Capacitance $\pm 10\%$
 ESR 100% of limit
 DCL 200% of limit

Vibration: 10 to 500 Hz, 0.06" and 10 g max, 2 h in each plane

Outline Drawings



Insulated-Case Dimensions, Add 0.063" (1.6 mm) to L for epoxy end seal

d = 20 AWG for D < 0.75", 18 AWG for D ≥ 0.75"

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Case Dimensions

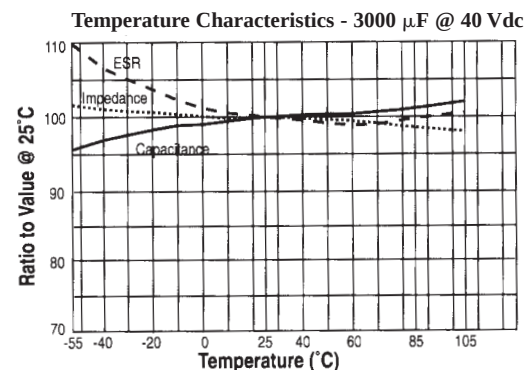
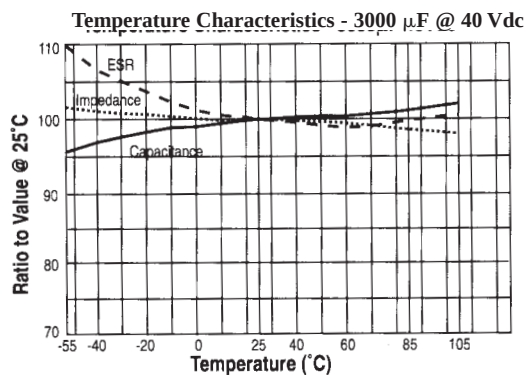
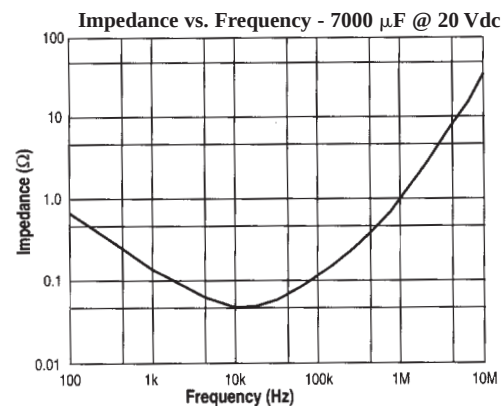
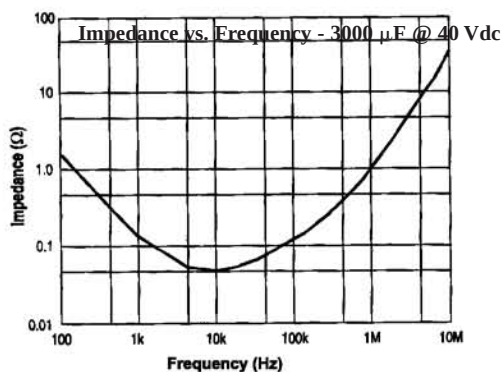
Case Code	Inches		mm		Case Code	Inches		mm	
	D ± .016	L max	D ± .41	L max		D ± .016	L max	D ± .41	L max
FE	.635	1.250	16.13	31.75	HE	.885	1.250	22.48	31.75
FJ	.635	1.750	16.13	44.45	HJ	.885	1.750	22.48	44.45
FL	.635	2.250	16.13	57.15	HL	.885	2.250	22.48	57.15
FP	.635	2.750	16.13	69.85	HP	.885	2.750	22.48	69.85
FS	.635	3.250	16.13	82.55v	HS	.885	3.250	22.48	82.55
FT	.635	3.750	16.13	95.35	HT	.885	3.750	22.48	95.25
GE	.760	1.250	19.30	31.75	JE	1.010	1.250	25.65	31.75
GJ	.760	1.750	19.30	44.45	JJ	1.010	1.750	25.65	44.45
GL	.760	2.250	19.30	57.15	JL	1.010	2.250	25.65	57.15
GP	.760	2.750	19.30	69.85	JP	1.010	2.750	25.65	69.85
GS	.760	3.250	19.30	82.55	JS	1.010	3.250	25.65	82.55
GT	.760	3.750	19.30	92.25	JT	1.010	3.75	25.65	95.25

Insulated dimensions

Part Numbering System

057	120	U	250	FE	2	E
Type	Capacitance	Tolerance	Voltage	Case Code	Insulation	Epoxy Endseal
057	6R8 = 6.8 μ F	U = -10% + 75%	6R3 = 6.3 Vdc	See ratings	0 = Bare Can	E = epoxy
	120 = 12 μ F	T = -10% + 50%	050 = 50 Vdc		1 = Polyester	Blank = no epoxy
	681 = 680 μ F		250 = 250 Vdc		2 = PVC	
	682 = 6800 μ F					

Typical Performance Curves



Type 057 105 °C Military Grade, Axial Leaded, Aluminum

Ratings

Cap. (μ F)	Catalog Part Number	ESR Max. Ω 120 Hz 20 kHz	Ripple A @85 °C 120Hz 20kHz	Nominal Size (in) D x L
6.3 Vdc (8 Vdc Surge)				
1500	057152U6R3FE2	0.400	0.153	1.0
2200	057222U6R3GE2	0.260	0.107	1.2
2700	057272U6R3FJ2	0.200	0.080	1.6
3300	057332U6R3HE2	0.180	0.073	1.5
4700	057472U6R3FL2	0.130	0.052	2.3
4700	057472U6R3GJ2	0.130	0.053	2.0
5600	057562U6R3FP2	0.098	0.039	3.0
6800	057682U6R3GL2	0.088	0.035	2.9
6800	057682U6R3HJ2	0.093	0.039	2.6
10000	057103U6R3GP2	0.067	0.028	3.7
10000	057103U6R3JJ2	0.073	0.033	3.1
12000	057123U6R3GS2	0.055	0.023	4.4
12000	057123U6R3HL2	0.062	0.027	3.6
15000	057153U6R3HP2	0.048	0.021	4.6
15000	057153U6R3JL2	0.049	0.022	4.3
18000	057183U6R3HS2	0.040	0.018	5.5
22000	057223U6R3JP2	0.038	0.018	5.4
27000	057273U6R3JS2	0.033	0.015	6.3
33000	057333U6R3JT2	0.029	0.015	7.1
7.5 Vdc (9 Vdc Surge)				
1200	057122U7R5FE2	0.410	0.153	0.9
1800	057152U7R5GE2	0.270	0.107	1.2
2700	057272U7R5FJ2	0.210	0.080	1.6
3300	057332U7R5HE2	0.190	0.073	1.5
3900	057392U725FL2	0.130	0.052	2.3
3900	057392U7RSGJ2	0.140	0.053	2.0
5600	057562U7R5FP2	0.100	0.039	2.9
5600	057562U7R5HJ2	0.095	0.039	2.5
5600	057562U7R8GL2	0.089	0.035	2.8
8200	057822U7R5GP2	0.068	0.028	3.6
8200	057822U7RSJJ2	0.075	0.033	3.0
10000	057103U7R5GS2	0.056	0.023	4.3
10000	057103U7R5HL2	0.063	0.027	3.6
12000	057123U7R5HP2	0.048	0.021	4.6
12000	057123U7R5JL2	0.050	0.022	4.3
18000	057183U7R5HS2	0.041	0.018	5.4
18000	057183U7R5JP2	0.039	0.018	5.4
22000	057223U7R5JS2	0.033	0.015	6.2
27000	057273U7R5JT2	0.030	0.015	7.0
10 Vdc (12 Vdc Surge)				
1000	057102U010FE2	0.410	0.153	0.9
1500	057152U010GE2	0.270	0.107	1.2
2200	057222U010FJ2	0.210	0.080	1.6
2700	057272U010HE2	0.190	0.073	1.5
3300	057332U010FL2	0.130	0.052	2.3
3300	057332U010GJ2	0.140	0.053	2.0
4700	057472U010FP2	0.100	0.039	2.9
4700	057472U010GL2	0.089	0.035	2.8
4700	057472U010HJ2	0.095	0.039	2.5
6800	057682U010GP2	0.068	0.028	3.6
6800	057682U010JJ2	0.075	0.033	3.0
8200	057822U010GS2	0.056	0.023	4.3
8200	057822U010HL2	0.063	0.027	3.6
10000	057103U010HP2	0.048	0.021	4.6
12000	057123U010JL2	0.050	0.022	4.3

Cap. (μ F)	Catalog Part Number	ESR Max. Ω 120 Hz 20 kHz	Ripple A @85 °C 120Hz 20kHz	Nominal Size (in) D x L
10 Vdc (12 Vdc Surge) (cont'd)				
15000	057153U010HS2	0.041	0.018	5.4
15000	057153U010JP2	0.039	0.018	5.4
18000	057183U010JS2	0.033	0.015	6.2
22000	057223U010JT2	0.030	0.015	7.0
16 Vdc (20 Vdc Surge)				
820	057821U016FE2	0.410	0.153	0.9
1200	057122U016GE2	0.270	0.107	1.2
1800	057182U016FJ2	0.210	0.080	1.6
2200	057222U016HE2	0.190	0.073	1.5
2700	057272U016FL2	0.130	0.052	2.3
2700	057272U016GJ2	0.140	0.054	2.0
3900	057392U016FP2	0.100	0.040	2.9
3900	057392U016GL2	0.089	0.036	2.8
3900	057392U016HJ2	0.095	0.039	2.5
5600	057562U016GP2	0.068	0.028	3.6
5600	057562U016JJ2	0.075	0.033	3.0
6800	057682U016GS2	0.056	0.023	4.3
6800	057682U016HL2	0.063	0.027	3.6
8200	057822U016HP2	0.048	0.021	4.6
8200	057822U016JL2	0.050	0.022	4.3
25 Vdc (35 Vdc Surge)				
12000	057123U016HS2	0.041	0.018	5.4
12000	057123U016JP2	0.039	0.018	5.4
15000	057153U016JS2	0.033	0.016	6.2
18000	057183U016JT2	0.030	0.015	7.0
25 Vdc (35 Vdc Surge)				
390	057391U025FE2	0.160	0.440	0.9
680	057681U025GE2	0.290	0.107	1.1
820	057821U025FJ2	0.220	0.080	1.5
1000	057102U025HE2	0.200	0.080	1.5
1200	057122U025FL2	0.140	0.053	2.2
1200	057122U025GJ2	0.150	0.055	1.9
1800	057182U025FP2	0.110	0.041	2.8
1800	057182U025GL2	0.095	0.037	2.7
1800	057182U025HJ2	0.100	0.040	2.4
2700	057272U025GP2	0.072	0.028	3.5
2700	057272U025JJ2	0.079	0.033	2.9
3300	057332U025GS2	0.059	0.024	4.2
3300	057332U025HL2	0.067	0.027	3.5
3900	057392U025HP2	0.051	0.021	4.4
3900	057392U025JL2	0.053	0.023	4.1
40 Vdc (55 Vdc Surge)				
5600	057562U025JP2	0.041	0.018	5.2
5600	057562U025HS2	0.043	0.019	5.2
6800	057682U025JS2	0.035	0.016	6.1
8200	057822U025JT2	0.031	0.015	6.9
40 Vdc (55 Vdc Surge)				
220	057221U040FE2	0.520	0.167	0.8
390	057391U040GE2	0.340	0.113	1.0
470	057471U040FJ2	0.260	0.087	1.4
560	057561U040HE2	0.230	0.080	1.3
820	057821U040FL2	0.170	0.055	2.0
820	057821U040GJ2	0.170	0.057	1.7
1000	057102U040FP2	0.130	0.042	2.6
1200	057122U040HJ2	0.120	0.041	2.2
1200	057122U040GL2	0.110	0.038	2.5

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Cap. (μ F)	Catalog Part Number	ESR Max. Ω		Ripple A @85 °C		Nominal Size (in)
		120 Hz	20 kHz	120Hz	20kHz	D x L
1800	057182U040GP2	0.084	0.029	3.2	4.7	3/4 x 2 5/8
1800	057182U040HL2	0.077	0.028	3.2	4.6	7/8 x 2 1/8
1800	057182U040JJ2	0.091	0.034	2.7	3.8	1 x 1 5/8
2200	057222U040GS2	0.069	0.025	3.9	5.5	3/4 x 3 1/8
2700	057272U040HP2	0.059	0.022	4.1	5.7	7/8 x 2 5/8
2700	057272U040JL2	0.060	0.023	3.9	5.2	1 x 2 1/8
3300	057332U040HS2	0.049	0.019	4.9	6.6	7/8 x 3 1/8
3300	057332U040JP2	0.046	0.019	4.9	6.4	1 x 2 5/8
4700	057472U040JS2	0.039	0.016	5.7	7.3	1 x 3 1/8
5600	057562U040JT2	0.034	0.015	6.5	8.1	1 x 3 5/8
50 Vdc (70 Vdc Surge)						
220	057221U050FE2	0.620	0.160	0.7	1.3	5/8 x 1 1/8
330	057331U050GE2	0.410	0.113	0.9	1.6	3/4 x 1 1/8
390	057391U050FJ2	0.310	0.080	1.2	2.2	5/8 x 1 5/8
470	057471U050HE2	0.280	0.080	1.2	1.9	7/8 x 1 1/8
560	057561U050GJ2	0.210	0.057	1.5	2.6	3/4 x 1 5/8
680	057681U050FL2	0.200	0.054	1.8	3.1	5/8 x 2 1/8
820	057821U050FP2	0.150	0.041	2.3	3.9	5/8 x 2 5/8
1000	057102U050GL2	0.130	0.038	2.2	3.7	3/4 x 2 1/8
1000	057102U050HJ2	0.140	0.043	2.0	3.1	7/8 x 1 5/8
1200	057122U050GP2	0.100	0.029	2.9	4.6	3/4 x 2 5/8
1500	057152U050HL2	0.093	0.029	2.9	4.4	7/8 x 2 1/8
1500	057152U050JJ2	0.110	0.037	2.4	3.5	1 x 1 5/8
1800	057182U050GS2	0.081	0.025	3.5	5.4	3/4 x 3 1/8
2200	057222U050JL2	0.073	0.025	3.4	4.8	1 x 2 1/8
2200	057222U050HP2	0.071	0.023	3.7	5.5	7/8 x 2 5/8
2700	057272U050HS2	0.058	0.019	4.4	6.4	7/8 x 3 1/8
2700	057272U050JP2	0.056	0.020	4.4	6.0	1 x 2 5/8
3900	057392U050JS2	0.047	0.017	5.2	6.9	1 x 3 1/8
4700	057472U050JT2	0.041	0.016	5.9	7.7	1 x 3 5/8
100 Vdc (135 Vdc Surge)						
47	057470U100FE2	1.300	0.400	0.5	0.8	5/8 x 1 1/8
82	057820U100GE2	0.850	0.260	0.6	1.0	3/4 x 1 1/8
100	057101U100FJ2	0.660	0.200	0.8	1.3	5/8 x 1 5/8
120	057121U100HE2	0.570	0.180	0.8	1.3	7/8 x 1 1/8
150	057151U100FL2	0.420	0.127	1.2	2.0	5/8 x 2 1/8
150	057151U100GJ2	0.430	0.133	1.1	1.7	3/4 x 1 5/8
220	057221U100FP2	0.310	0.093	1.6	2.5	5/8 x 2 5/8
270	057271U100GL2	0.280	0.087	1.6	2.4	3/4 x 2 1/8
270	057271U100HJ2	0.290	0.093	1.4	2.2	7/8 x 1 5/8
330	057331U100GP2	0.200	0.065	2.0	3.1	3/4 x 2 5/8
330	057331U100JJ2	0.210	0.073	1.8	2.6	1 x 1 5/8
390	057391U100HL2	0.190	0.060	2.1	3.1	7/8 x 2 1/8
470	057471U100GS2	0.160	0.053	2.5	3.8	3/4 x 3 1/8
560	057561U100HP2	0.140	0.045	2.7	4.0	7/8 x 2 5/8

Cap. (μ F)	Catalog Part Number	ESR Max. Ω		Ripple A @85 °C		Nominal Size (in)
		120 Hz	20kHz	120Hz	20kHz	D x L
560	057561U100JL2	0.140	0.047	2.5	3.7	1 x 2 1/8
680	057681U100HS2	0.110	0.037	3.3	4.7	7/8 x 3 1/8
680	057681U100JP2	0.100	0.037	3.3	4.6	1 x 2 5/8
1000	057102U100JS2	0.085	0.030	3.9	5.5	1 x 3 1/8
1200	057122U100JT2	0.072	0.027	4.6	6.3	1 x 3 5/8
200 Vdc (250 Vdc Surge)						
18	057180U200FE2	4.500	2.270	0.3	0.4	5/8 x 1 1/8
27	057270U200GE2	2.900	1.470	0.4	0.5	3/4 x 1 1/8
33	057330U200FJ2	2.200	1.130	0.5	0.6	5/8 x 1 5/8
39	057390U200HE2	1.900	0.933	0.5	0.6	7/8 x 1 1/8
56	057560U200FL2	1.400	0.733	0.7	0.9	5/8 x 2 1/8
56	057560U200GJ2	1.400	0.733	0.6	0.8	3/4 x 1 5/8
68	057680U200FP2	1.000	0.527	1.0	1.1	5/8 x 2 5/8
82	057820U200GL2	0.910	0.460	0.9	1.1	3/4 x 2 1/8
82	057820U200HJ2	0.940	0.473	0.9	1.0	7/8 x 1 5/8
120	057121U00GP2	0.670	0.340	1.2	1.5	3/4 x 2 5/8
120	057121U200HL2	0.600	0.307	1.2	1.5	7/8 x 2 1/8
120	057121U200JJ2	0.680	0.347	1.1	1.3	1 x 1 5/8
150	057151U200GS2	0.530	0.273	1.5	1.8	3/4 x 3 1/8
180	057181U200HP2	0.440	0.227	1.6	1.9	7/8 x 2 5/8
180	057181U200JL2	0.430	0.220	1.6	1.9	1 x 2 1/8
220	057221U200HS2	0.350	0.180	2.0	2.4	7/8 x 3 1/8
270	057271U200JP2	0.320	0.167	2.0	2.4	1 x 2 5/8
330	057331U200JS2	0.260	0.133	2.5	2.9	1 x 3 1/8
390	057391U200JT2	0.210	0.107	2.9	3.4	1 x 3 5/8
250 Vdc (300 Vdc Surge)						
12	057120U250FE2	5.200	2.330	0.3	0.3	5/8 x 1 1/8
22	057220U250GE2	3.300	1.530	0.3	0.4	3/4 x 1 1/8
27	057270U250FJ2	2.600	1.200	0.5	0.6	5/8 x 1 5/8
33	057330U250HE2	2.200	1.000	0.5	0.6	7/8 x 1 1/8
39	057390U250FL2	1.700	0.733	0.7	0.9	5/8 x 2 1/8
39	057390U250GJ2	1.700	0.733	0.6	0.7	3/4 x 1 5/8
56	057560U250FP2	1.200	0.553	0.9	1.1	5/8 x 2 5/8
68	057680U250GL2	1.100	0.487	0.8	1.1	3/4 x 2 1/8
68	057680U250HJ2	1.100	0.500	0.8	1.0	7/8 x 1 5/8
82	057820U250GP2	0.790	0.353	1.1	1.4	3/4 x 2 5/8
82	057820U250JJ2	0.790	0.360	1.0	1.2	1 x 1 5/8
100	057101U250HL2	0.700	0.320	1.1	1.4	7/8 x 2 1/8
120	057121U250GS2	0.620	0.280	1.4	1.7	3/4 x 3 1/8
150	057151U250HP2	0.520	0.233	1.5	1.9	7/8 x 2 5/8
150	057151U250JL2	0.510	0.233	1.4	1.8	1 x 2 1/8
180	057181U250HS2	0.410	0.187	1.8	2.3	7/8 x 3 1/8
180	057181U250JP2	0.370	0.173	1.9	2.3	1 x 2 5/8
220	057221U250JS2	0.300	0.140	2.3	2.8	1 x 3 1/8
270	057271U250JT2	0.250	0.113	2.7	3.3	1 x 3 5/8