

FEATURES

- Directly mountable on printed circuit board without holders.
- Smaller in sizes than ordinary capacitors.
- Terminal spacing fixed at 10mm for PC board plug in.
- Aluminum case designed with explosion-proof vent.



SPECIFICATIONS

Item	Performance Characteristics	
Operating Temperature Range	-40 to +85°C	-25 to +85°C
Rated Working Voltage Range	10 to 250V	315 to 500V
Nominal Capacitance Range	56 to 82000µF	
Capacitance Tolerance	±20% at 120Hz, +20°C	
Leakage Current	I ≤ 3√CV (µA) after 5 minutes application of rated working voltage at +20°C	
tan δ (120Hz, +20°C)	Working Voltage (V)	10 16 25 35 50 63 80 100
	tan δ (max.)	0.55 0.50 0.45 0.40 0.35 0.30 0.25 0.20
	Working Voltage (V)	160~250 315~420 450~500
	tan δ (max.)	0.15 0.15 0.20
	For capacitance value >33000µF, add following calculated value: $\frac{(\text{rated capacitance}) - 33000\mu\text{F}}{10000\mu\text{F}} \times 0.1$	
Low Temperature Characteristics	Impedance ratio max. at 120Hz	
	Working Voltage (V)	10~100 160~250 315~385 400~450 500
	Z-25°C / Z+20°C	4 3 5 8 8
	Z-40°C / Z+20°C	15 15 - - -
High Temperature Loading	Test time : 2,000 hours	Post test requirements at +20°C
	Test temperature : +85°C	Leakage current : ≤Initial specified value
	Test conditions : Rated DC working voltage with rated ripple current	Cap. change : within ±20% of the initial measured value
		tan δ : ≤200% of the initial specified value
Shelf Life	At +85°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits	
	Leakage current : ≤Initial specified value	
	Cap. change : within ±15% of the initial measured value	
	tan δ : ≤150% of the initial specified value	
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)	

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient	Freq. (Hz)	Rated Voltage			
		60	120	1k	10k~50k
	10~100V	0.90	1.00	1.15	1.25
	160~250V	0.80	1.00	1.15	1.47
	315~500V	0.80	1.00	1.15	1.47

PART NUMBER SYSTEM (EXAMPLE : 250V 330µF)

1	2 3	4 5 6	7	8 9	10	11 12	13 14
E	LP	337	M	2E	N	30	SW

Type (Terminal Code)
 Case Length (30mm)
 Diameter (22mm)
 Voltage (250V)
 Tolerance (±20%)
 Capacitance (330µF)
 Series
 E-CAP

STANDARD RATINGS

Voltage (Code)		10V (1A)		16V (1C)		25V (1E)		35V (1V)					
Cap. (µF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current				
2700	278							20 x 25	1.76				
3300	338							20 x 30	2.14				
3900	398							20 x 30	2.28				
4700	478					20 x 25	2.18	22 x 25	2.22				
								20 x 35	2.46				
								22 x 30	2.46				
5600	568					20 x 30	2.33	25 x 25	2.43				
								22 x 35	2.79				
								25 x 30	2.75				
6800	688			20 x 25	2.33	20 x 35	2.56	22 x 40	2.97				
										25 x 30	2.89		
										30 x 25	3.09		
8200	828			20 x 30	2.56	20 x 40	2.91	22 x 45	3.47				
										25 x 35	3.33		
										22 x 30	2.86		
10000	109	20 x 25	2.22	20 x 35	2.85	22 x 35	3.31	25 x 35	3.29				
												30 x 30	3.29
												22 x 50	3.75
12000	129	20 x 30	2.44	20 x 40	3.20	22 x 40	3.77	25 x 40	3.65				
												30 x 30	3.61
												25 x 45	4.15
15000	159	22 x 25	2.41	22 x 30	3.13	25 x 35	3.63	30 x 35	4.14				
												35 x 30	4.27
												30 x 25	3.80
18000	189	20 x 35	2.90	22 x 35	3.69	22 x 50	4.21	30 x 40	4.80				
												35 x 35	4.95
												25 x 40	4.10
22000	229	25 x 25	2.88	30 x 25	3.73	30 x 30	4.00	35 x 45	6.38				
												30 x 45	5.30
												25 x 45	4.68
27000	279	20 x 40	3.31	22 x 40	3.98	25 x 45	4.68	35 x 40	5.71				
												30 x 35	4.66
												30 x 30	3.88
33000	339	25 x 30	3.66	22 x 40	3.79	22 x 50	4.52	35 x 40	6.90				
												30 x 40	5.33
												25 x 40	4.44
39000	399	30 x 25	3.53	30 x 30	4.38	35 x 35	5.26						
												30 x 45	4.98
												30 x 35	4.95
47000	479	35 x 30	4.04	35 x 30	4.82	35 x 40	6.02						
												35 x 40	6.02
												22 x 45	4.04
56000	569	22 x 50	4.58	25 x 50	5.49	35 x 45	6.75						
												25 x 40	4.56
												30 x 40	5.60
68000	689	30 x 30	4.58	35 x 30	5.46								
												25 x 45	5.29
												30 x 45	6.21
82000	829	25 x 45	5.29	30 x 45	6.21	35 x 50	7.56						
												35 x 35	6.12
												25 x 50	5.78
27000	279	30 x 40	5.78	35 x 40	6.89								
												30 x 50	6.93
												35 x 35	5.55
33000	339	35 x 45	7.69										
												30 x 45	6.59
												35 x 35	6.40
39000	399	35 x 45	7.69										
												30 x 50	7.50
												35 x 40	7.48
47000	479	35 x 50	8.50										

Maximum Allowable Ripple Current (Arms) at 85°C 120Hz

Case Size ΦD x L (mm)

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

STANDARD RATINGS

Voltage (Code)		50V (1H)		63V (1J)		80V (1K)		100V (2A)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
680	687							20 x 25	1.66
820	827							20 x 30	1.85
								22 x 25	1.86
1000	108					20 x 25	1.56	20 x 35	2.02
								22 x 30	2.02
1200	128					20 x 30	1.80	20 x 40	2.12
						22 x 25	1.77	22 x 30	2.12
1500	158			20 x 25	1.69	20 x 35	2.10	22 x 35	2.45
						22 x 30	2.01	25 x 30	2.47
1800	188	20 x 25	1.70	20 x 30	2.04	20 x 40	2.30	22 x 40	2.77
				22 x 25	1.90	22 x 30	2.11	25 x 35	2.81
2200	228	20 x 30	2.07	20 x 35	2.40	22 x 40	2.53	22 x 45	3.15
		22 x 25	1.93	22 x 30	2.35	25 x 30	2.53	25 x 40	3.21
2700	278	20 x 35	2.21	20 x 40	2.52	22 x 45	2.93	25 x 45	3.66
		22 x 30	2.21	22 x 35	2.50	25 x 35	2.93	30 x 35	3.65
3300	338	20 x 40	2.41	22 x 40	2.72	30 x 30	2.91	35 x 30	3.77
		22 x 30	2.41	25 x 30	2.74	22 x 50	3.23	25 x 50	4.15
3900	398	25 x 25	2.38	30 x 25	2.78	25 x 40	3.29	30 x 40	4.18
		22 x 35	2.72	22 x 45	3.09	25 x 45	3.62	35 x 35	4.07
4700	478	25 x 30	2.68	25 x 35	3.13	30 x 35	3.70	30 x 45	4.67
		30 x 30	3.09	30 x 40	3.59	25 x 50	4.28	35 x 35	4.61
5600	568	22 x 40	3.02	22 x 50	3.69	30 x 40	4.23	30 x 50	5.26
		25 x 30	3.07	25 x 40	3.59	35 x 30	4.12	35 x 40	5.23
6800	688	30 x 25	3.01	30 x 30	3.54	30 x 45	4.70	35 x 45	5.88
		22 x 45	3.43	25 x 45	4.01	35 x 35	4.64		
8200	828	25 x 35	3.47	30 x 35	4.00	30 x 50	5.27	35 x 50	6.01
		30 x 30	3.43	35 x 30	3.75	35 x 40	5.24		
10000	109	22 x 50	3.94	25 x 50	4.52	35 x 45	5.89		
		25 x 40	3.87	30 x 40	4.55				
12000	129	30 x 35	3.93	35 x 30	4.44				
		25 x 45	4.44	30 x 45	5.12				
15000	159	30 x 35	4.47	35 x 35	5.05				
		35 x 30	4.41	30 x 50	5.78				
18000	189	30 x 40	5.08	30 x 50	5.78	35 x 50	6.63		
		35 x 35	4.92	35 x 40	5.75				
12000	129	30 x 50	5.72	35 x 45	6.47				
		35 x 40	5.69						
15000	159	35 x 45	6.56						
18000	189	35 x 50	7.14						

Maximum Allowable Ripple Current (Arms) at 85°C 120Hz

Case Size ΦD x L (mm)

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STANDARD RATINGS

Voltage (Code)		160V (2C)		180V (2P)		200V (2D)		220V (2N)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
180	187							20 x 25	1.11
220	227					20 x 25	1.19	20 x 25 22 x 25	1.23 1.30
270	277	20 x 25	1.28	20 x 25	1.29	20 x 30 22 x 25	1.39 1.37	20 x 30 22 x 25	1.46 1.42
330	337	20 x 25	1.55	20 x 30 22 x 25	1.77 1.49	20 x 30 22 x 25	1.56 1.51	20 x 35 22 x 30 25 x 25	1.64 1.59 1.59
390	397	20 x 30 22 x 25	1.63 1.63	20 x 30 22 x 25	1.84 1.84	20 x 35 22 x 30 25 x 25	1.74 1.73 1.71	20 x 40 22 x 35 25 x 25	1.79 1.80 1.75
470	477	20 x 35 22 x 30 25 x 25	1.90 1.86 1.86	20 x 35 22 x 30 25 x 25	1.91 1.91 2.08	20 x 40 22 x 30 25 x 30	2.03 1.97 1.95	22 x 35 25 x 30 30 x 25	2.06 2.08 2.16
560	567	20 x 40 22 x 30 25 x 30	2.14 2.15 2.15	20 x 40 22 x 35 25 x 25	2.15 2.25 2.25	22 x 40 25 x 30 30 x 25	2.18 2.15 2.15	22 x 40 25 x 35 30 x 25	2.22 2.38 2.18
680	687	22 x 40 25 x 30 30 x 25	2.35 2.33 2.33	22 x 35 25 x 30 30 x 25	2.48 2.50 2.46	22 x 45 25 x 35 30 x 30	2.48 2.48 2.48	22 x 45 25 x 40 30 x 30	2.62 2.56 2.52
820	827	22 x 45 25 x 35 30 x 30	2.68 2.65 2.64	22 x 40 25 x 35 30 x 25	2.86 2.75 2.69	22 x 50 25 x 40 30 x 30	2.81 2.79 2.75	25 x 45 30 x 35 35 x 30	2.91 2.84 2.79
1000	108	22 x 50 25 x 40 30 x 30	3.02 3.00 2.96	25 x 40 30 x 30	3.06 3.10	25 x 45 30 x 35 35 x 30	3.28 3.15 3.25	25 x 50 30 x 40 35 x 30	3.53 3.36 3.29
1200	128	25 x 45 30 x 35 35 x 30	3.43 3.41 3.40	25 x 45 30 x 35 35 x 30	3.63 3.55 3.49	25 x 50 30 x 40 35 x 35	3.61 3.61 3.57	30 x 45 35 x 35	3.72 3.68
1500	158	30 x 40 35 x 35	3.96 3.94	30 x 40 35 x 35	4.10 4.02	30 x 45 35 x 40	4.13 4.06	35 x 40	4.10
1800	188	30 x 45 35 x 35	4.31 4.28	30 x 45 35 x 35	4.55 4.54	35 x 45	4.59	35 x 45	4.52
2200	228	35 x 40	4.96	35 x 40	4.83	35 x 50	5.25		
2700	278	35 x 50	5.57	35 x 50	5.30				

Maximum Allowable Ripple Current (Arms) at 85°C 120Hz

Case Size Φ D x L (mm)

STANDARD RATINGS

Voltage (Code)		250V (2E)		315V (2F)		350V (2V)		385V (2Y)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
68	686							20 x 25	0.68
82	826							20 x 30	0.74
								22 x 25	0.76
100	107							20 x 30	0.86
								22 x 30	0.89
120	127					20 x 30	0.96	20 x 35	0.96
						22 x 25	1.04	25 x 25	1.02
150	157					20 x 30	1.10	20 x 40	1.10
				20 x 30	1.00	22 x 30	1.20	22 x 35	1.12
						25 x 25	1.22	25 x 30	1.14
180	187	20 x 25	1.20	20 x 35	1.13	20 x 35	1.24	22 x 40	1.27
				22 x 30	1.29	22 x 30	1.34	25 x 35	1.30
				25 x 25	1.38	25 x 25	1.37	30 x 25	1.37
220	227	20 x 30	1.26	20 x 40	1.29	22 x 35	1.47	22 x 45	1.42
				22 x 35	1.41	25 x 30	1.53	25 x 35	1.48
		22 x 25	1.24	25 x 30	1.47	30 x 25	1.54	30 x 30	1.49
270	277	20 x 30	1.42	22 x 40	1.70	22 x 40	1.70	25 x 40	1.61
				25 x 35	1.73	25 x 35	1.73	30 x 35	16.4
		22 x 30	1.50	25 x 30	1.70	30 x 25	1.80	30 x 35	16.4
330	337	20 x 35	1.68	22 x 45	1.91	22 x 45	1.87	25 x 50	1.80
		22 x 30	1.66	25 x 35	1.94	25 x 40	1.97	30 x 40	1.85
		25 x 25	1.61	30 x 30	1.98	30 x 30	2.03	35 x 30	1.87
390	397	20 x 40	1.92	22 x 50	2.07	25 x 40	2.14	30 x 40	2.05
		22 x 35	1.88	25 x 40	2.11	30 x 35	2.23	35 x 35	2.07
		25 x 30	1.88	30 x 30	2.15	35 x 30	2.30	35 x 35	2.07
470	477	22 x 40	2.15	25 x 45	2.39	30 x 35	2.53	30 x 50	2.26
		25 x 35	2.15	30 x 35	2.38	35 x 30	2.55	35 x 40	2.26
		30 x 25	2.04	35 x 30	2.36	35 x 30	2.55	35 x 40	2.26
560	567	22 x 45	2.48	30 x 40	2.63	30 x 40	2.73	35 x 45	2.59
		25 x 35	2.35	35 x 35	2.69	35 x 35	2.75	35 x 45	2.59
		30 x 30	2.35	35 x 35	2.69	35 x 35	2.75	35 x 45	2.59
680	687	25 x 40	2.67	30 x 45	2.80	35 x 40	3.15	35 x 50	2.80
		30 x 35	2.71	35 x 40	3.05	35 x 40	3.15	35 x 50	2.80
820	827	25 x 50	3.01	30 x 50	3.28	35 x 45	3.47		
		30 x 35	2.98	35 x 45	3.45	35 x 45	3.47		
		35 x 30	2.96	35 x 45	3.45	35 x 45	3.47		
1000	108	30 x 45	3.56	35 x 50	3.57	35 x 50	3.60		
		35 x 35	3.48	35 x 50	3.57	35 x 50	3.60		
1200	128	30 x 50	3.99						
		35 x 40	3.84						
1500	158	35 x 45	4.33						
1800	188	35 x 50	4.54						

Maximum Allowable Ripple Current (Arms) at 85°C 120Hz

Case Size ΦD x L (mm)

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STANDARD RATINGS

Voltage (Code)		400V (2G)		420V (2M)		450V (2W)		500V (2H)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
56	566					20 x 25	0.61		
68	686	20 x 25	0.75	20 x 25	0.70	20 x 30	0.70		
						22 x 25	0.71		
82	826	20 x 30	0.82	20 x 30	0.80	20 x 35	0.80		
		22 x 25	0.84	22 x 25	0.85	22 x 25	0.86		
100	107	20 x 30	0.95	20 x 35	0.90	20 x 35	0.88	25 x 25	0.80
		22 x 30	0.99	22 x 30	0.97	22 x 30	0.95	30 x 25	0.90
		25 x 25	0.99	25 x 25	0.98	25 x 25	0.97		
120	127	20 x 35	1.07	20 x 35	1.04	20 x 40	0.99	25 x 30	0.89
		22 x 30	1.09	22 x 30	1.07	22 x 35	1.07		
		25 x 25	1.13	25 x 25	1.08	25 x 30	1.09	30 x 25	0.90
						30 x 25	1.12		
150	157	20 x 40	1.22	20 x 45	1.17	22 x 40	1.18		
		22 x 35	1.24	22 x 35	1.21	25 x 30	1.25	25 x 35	1.07
		25 x 30	1.27	25 x 30	1.26	30 x 25	1.29		
180	187	22 x 40	1.41	22 x 40	1.33	22 x 45	1.32		
		25 x 30	1.44	25 x 35	1.42	25 x 35	1.40	30 x 35	1.30
		30 x 25	1.52	30 x 25	1.48	30 x 30	1.45		
220	227	22 x 45	1.58	22 x 45	1.55	25 x 40	1.59		
		25 x 35	1.64	25 x 35	1.58	30 x 30	1.64	25 x 45	1.40
		30 x 30	1.66	30 x 30	1.65	35 x 30	1.66		
270	277	25 x 40	1.79	25 x 40	1.74	25 x 45	1.73	25 x 50	1.60
		30 x 30	1.82	30 x 35	1.90	30 x 35	1.89	30 x 40	1.55
				35 x 30	1.94	35 x 30	1.90		
330	337	25 x 45	2.00	25 x 50	2.20	30 x 40	2.12		
		30 x 35	2.05	30 x 35	1.98			30 x 45	1.80
		35 x 30	2.05	35 x 35	2.17	35 x 35	2.15		
390	397	30 x 40	2.26	30 x 40	2.22	30 x 45	2.35		
		35 x 35	2.28	35 x 35	2.27	35 x 40	2.38	30 x 50	2.10
470	477	30 x 45	2.51	30 x 45	2.50				
		35 x 40	2.54	35 x 40	2.61	35 x 45	2.68		
560	567	35 x 40	2.85	35 x 45	2.95				
680	687	35 x 50	3.10						

Maximum Allowable Ripple Current (Arms) at 85°C 120Hz

Case Size Φ D x L (mm)