

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	$I \leq 3\sqrt{CV}$ (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		
Shelf Life	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		
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)					

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient	Freq. (Hz)	Rated Voltage			
		60	120	1k	10~50k
	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	23	456	7	89	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 25	2.56	30 x 30	3.29		
10000	109	20 x 25	2.22	20 x 35	2.85	22 x 35	3.31	22 x 50	3.75						
												25 x 40	3.65		
												30 x 30	3.61		
12000	129	20 x 30	2.44	20 x 40	3.20	22 x 40	3.77	25 x 45	4.15						
												30 x 35	4.14		
												22 x 25	2.41	35 x 30	4.27
15000	159	20 x 35	2.90	22 x 35	3.69	22 x 50	4.21	30 x 40	4.80						
												22 x 30	2.88	25 x 40	4.10
												25 x 25	2.88	30 x 30	4.00
18000	189	20 x 40	3.31	22 x 40	3.98	25 x 45	4.68	35 x 35	4.95						
												30 x 45	5.30		
												22 x 35	3.22	30 x 35	4.66
22000	229	22 x 30	3.08	30 x 30	3.88	35 x 30	4.68	35 x 40	5.71						
												22 x 40	3.79	22 x 50	4.52
												25 x 30	3.66	25 x 40	4.44
27000	279	30 x 25	3.53	30 x 30	4.38	35 x 35	5.26	35 x 45	6.38						
												22 x 45	4.04	25 x 45	4.98
												25 x 35	4.04	30 x 35	4.95
33000	339	30 x 30	4.82	35 x 30	4.82	35 x 40	6.02	35 x 50	6.90						
												22 x 50	4.58	25 x 50	5.49
												25 x 40	4.56	30 x 40	5.60
39000	399	30 x 30	5.46	35 x 30	5.46	35 x 45	6.75								
												25 x 45	5.29	30 x 45	6.21
												30 x 35	5.21	35 x 35	6.12
47000	479	35 x 30	6.12	35 x 35	6.12	35 x 50	7.56								
												25 x 50	5.78	30 x 50	6.93
												30 x 40	5.78	35 x 40	6.89
56000	569	35 x 35	6.89	35 x 45	7.69										
										30 x 45	6.59	35 x 35	6.40		
68000	689	35 x 35	6.40	35 x 45	7.69										
										30 x 50	7.50	35 x 40	7.48		
82000	829	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 30	2.12
						22 x 25	1.77	25 x 25	2.11
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
2700	278	20 x 35	2.21	25 x 25	2.30	30 x 25	2.56	30 x 30	3.17
				22 x 30	2.21	20 x 40	2.52	22 x 45	2.93
3300	338	20 x 40	2.41	22 x 35	2.50	25 x 35	2.93	30 x 35	3.65
				22 x 40	2.72	30 x 30	2.91	35 x 30	3.77
3900	398	22 x 30	2.41	25 x 30	2.74	22 x 50	3.23	25 x 50	4.15
				25 x 25	2.38	25 x 40	3.29	30 x 40	4.18
4700	478	22 x 35	2.72	30 x 25	2.78	30 x 30	3.25	35 x 35	4.07
				25 x 30	2.68	22 x 45	3.09	30 x 45	4.67
5600	568	25 x 30	2.68	25 x 35	3.13	25 x 45	3.62	30 x 45	4.61
				30 x 30	3.09	30 x 35	3.70	35 x 35	4.61
6800	688	22 x 40	3.02	22 x 50	3.69	25 x 50	4.28	30 x 50	5.26
				25 x 30	3.07	25 x 40	3.59	30 x 40	4.23
8200	828	30 x 25	3.01	30 x 30	3.54	35 x 30	4.12	35 x 40	5.23
				22 x 45	3.43	30 x 45	4.70	35 x 45	5.88
10000	109	25 x 35	3.47	30 x 35	4.00	35 x 35	4.64	35 x 45	5.88
				30 x 30	3.43	35 x 30	3.75	35 x 35	4.64
12000	129	22 x 50	3.94	25 x 50	4.52	30 x 50	5.27	35 x 50	6.01
				25 x 40	3.87	30 x 40	4.55	35 x 40	5.24
15000	159	30 x 35	4.44	35 x 30	4.44	35 x 40	5.24	35 x 50	6.01
				25 x 45	4.44	30 x 45	5.12	35 x 45	5.89
18000	189	30 x 35	4.47	35 x 35	5.05	35 x 45	5.89	35 x 50	6.63
				35 x 30	4.41	35 x 35	5.05	35 x 45	6.47
10000	109	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	35 x 35	4.92	35 x 40	5.75				
				30 x 50	5.72				
15000	159	35 x 40	5.69	35 x 45	6.47				
				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		
								20 x 30	0.86		
100	107							22 x 30	0.89		
						20 x 30	0.96	20 x 35	0.96		
120	127					22 x 25	1.04	22 x 30	0.98		
						25 x 25	1.02	25 x 25	1.02		
150	157			20 x 30	1.00	20 x 30	1.10	20 x 40	1.10		
						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		
				22 x 30	1.50	25 x 30	1.70	25 x 35	1.73		
						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		
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				
560	567	22 x 45	2.48	30 x 40	2.63	30 x 40	2.73				
				25 x 35	2.35	35 x 35	2.75	35 x 45	2.59		
				30 x 30	2.35						
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				
820	827	25 x 50	3.01	30 x 50	3.28						
				30 x 35	2.98	35 x 45	3.45	35 x 45	3.47		
				35 x 30	2.96						
1000	108	30 x 45	3.56	35 x 50	3.57	35 x 50	3.60				
								35 x 35	3.48		
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						
						20 x 30	0.82	20 x 30	0.80	20 x 35	0.80		
82	826	22 x 25	0.84	22 x 25	0.85	22 x 25	0.86						
						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
100	107	25 x 25	0.99	25 x 25	0.98	25 x 25	0.97	25 x 25	0.97				
						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		
120	127	25 x 25	1.13	25 x 25	1.08	30 x 25	1.12	30 x 25	0.90				
						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
150	157	25 x 30	1.27	30 x 25	1.30	30 x 25	1.29	30 x 25	1.29				
						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
180	187	30 x 25	1.52	30 x 25	1.48	30 x 30	1.45	30 x 30	1.45				
						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
220	227	30 x 30	1.66	30 x 30	1.65	35 x 30	1.66	35 x 30	1.66				
						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
270	277	35 x 30	1.94	35 x 30	1.94	35 x 30	1.90	35 x 30	1.90				
						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	35 x 35	2.15	30 x 45	1.80
330	337	35 x 35	2.05	35 x 35	2.17	35 x 35	2.17	35 x 35	2.15				
						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
390	397	30 x 40	2.26	30 x 40	2.22	30 x 45	2.35	30 x 45	2.35				
						35 x 40	2.51	30 x 45	2.50	35 x 45	2.68		
						35 x 35	2.28	35 x 35	2.27	35 x 40	2.38		
470	477	35 x 40	2.54	35 x 40	2.61	35 x 45	2.68						
						30 x 45	2.51	30 x 45	2.50				
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 ΦD x L (mm)