

FEATURES

- Load life of 2,000 hours application of ripple current at 105°C.
- Suitable for use in electronic and industrial equipments such as computer, programming control exchanger for power supplies filtering and energy storing.



SPECIFICATIONS

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105°C	-25 to +105°C
Rated Working Voltage Range	10 to 100V	160 to 500V
Nominal Capacitance Range	180 to 680000μF	
Capacitance Tolerance	±20% at 120Hz, +20°C	
Leakage Current	I ≤ 0.02CV (μA) or 5 (mA) whichever is smaller measured after 5 minutes application of rated working voltage at +20°C	
tan δ (120Hz, +20°C)	The values shown in the STANDARD RATINGS tables	
Low Temperature Characteristics	Impedance ratio max. at 120Hz	
	Working Voltage (V)	10~100 160~500
	Z-25°C / Z+20°C	- 8
	Z-40°C / Z+20°C	15 -
High Temperature Loading	Test time : 2,000 hours	Post test requirements at +20°C
	Test temperature : +105°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 +105°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 ±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

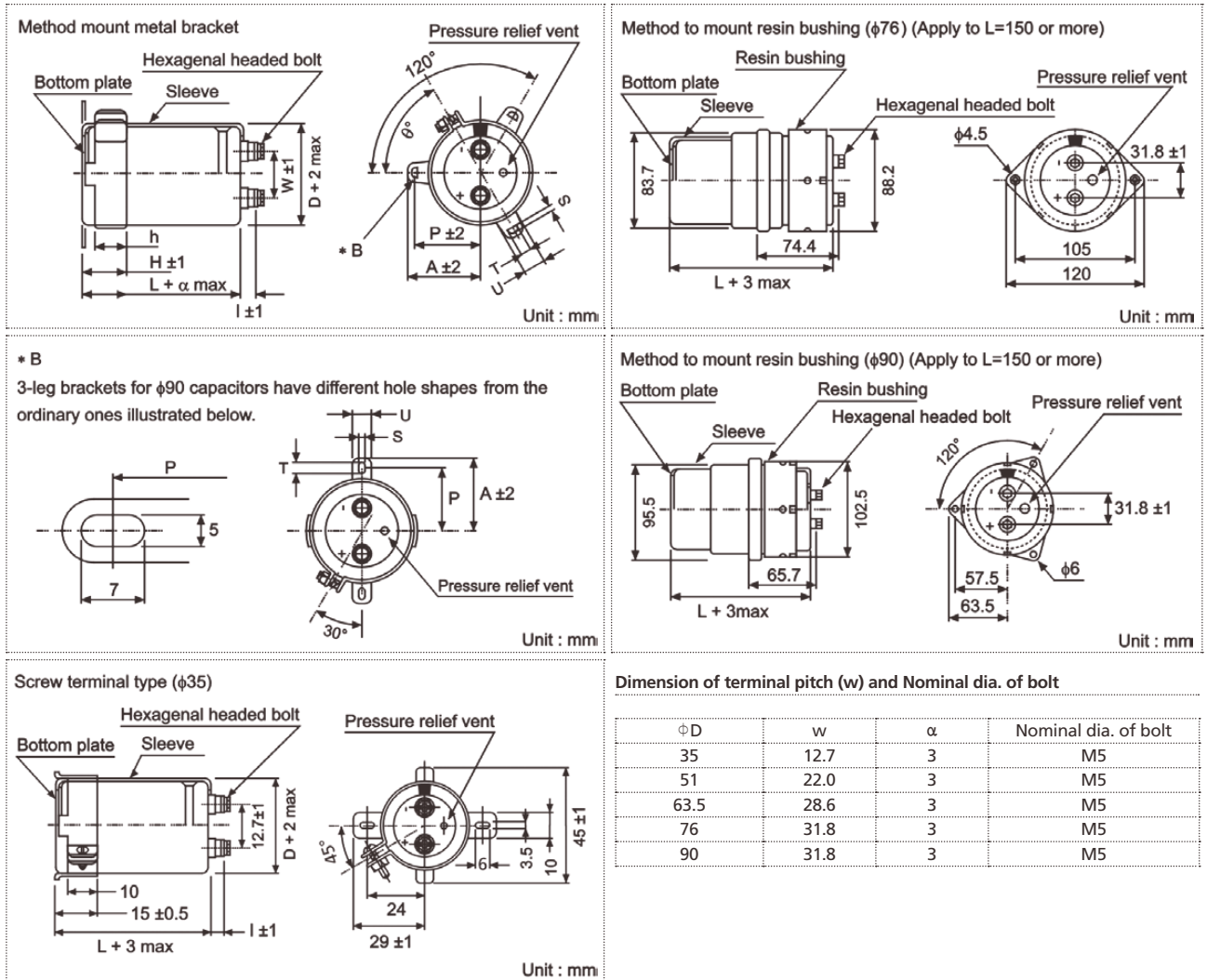
Coefficient	Freq. (Hz)	Rated Voltage				
		50	120	300	1k	10k~
Rated Voltage	<160V	0.80	1.00	1.08	1.15	1.15
	≥160V	0.80	1.00	1.08	1.15	1.20

PART NUMBER SYSTEM (EXAMPLE : 350V 2700μF)

1	2 3	4 5 6	7	8 9	10	11 12	13 14
E	WT	278	M	2V	T	1L	OO

Type (Terminal Code)
 Case Length (100mm)
 Diameter (63.5mm)
 Voltage (350V)
 Tolerance (±20%)
 Capacitance (2700μF)
 Series
 E-CAP

CASE SIZE TABLE



Dimensions of mounting bracket

Voltage (Code)		3 - Leg				2 - Leg				
Symbol	ϕD	51	63.5	76	90	35	51	63.5	76	90
P		32.5	38.1	44.5	50.8	24	33.2	40.5	46.5	53
A		38.5	43	49.2	58.5	29	40	46.5	53	59
T		7.5	8.0	7.0	8.0	6.0	6.0	7.0	6.0	6.0
S		5.0	5.0	5.0	5.0	3.5	4.5	4.5	4.5	4.5
U		12	14	14	18	10	14	14	14	14
θ°		60	60	60	60	30	30	30	30	30
H		20	25	30	35	15	25	35	35	35
h		15	20	24	25	10	15	20	20	20

STANDARD RATINGS

Voltage (Code)		10V (1A)			16V (1C)			25V (1E)		
SV		13			20			32		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
12000	129							35 x 50	0.35	3.7
15000	159							35 x 50	0.35	4.1
18000	189				35 x 50	0.40	4.2	35 x 60	0.35	4.8
22000	229				35 x 50	0.40	4.7	35 x 60	0.35	5.3
27000	279	35 x 50	0.45	4.9	35 x 60	0.40	5.5	35 x 80	0.35	6.4
33000	339	35 x 50	0.50	5.1	35 x 60	0.45	5.7	35 x 80	0.40	6.7
39000	399	35 x 60	0.50	5.9	35 x 80	0.45	6.8	35 x 100	0.40	7.8
47000	479	35 x 80	0.50	7.1	35 x 80	0.50	7.1	35 x 120	0.40	9.3
56000	569	35 x 80	0.60	7.1	35 x 100	0.50	8.4	51 x 80	0.45	9.7
68000	689	35 x 100	0.60	8.5	35 x 100	0.55	8.8	51 x 100	0.45	11.2
82000	829	35 x 100	0.65	8.9	51 x 80	0.55	10.7	51 x 100	0.50	11.2
100000	10T	35 x 120	0.65	10.7	51 x 80	0.65	10.8	51 x 120	0.50	14.8
120000	12T	51 x 80	0.75	11.0	51 x 100	0.65	13.1	63.5 x 100	0.65	14.9
150000	15T	51 x 100	0.80	13.2	51 x 120	0.70	15.3	63.5 x 120	0.65	17.9
180000	18T	51 x 120	0.80	15.7	51 x 120	0.80	15.7	63.5 x 120	0.80	17.9
220000	22T	51 x 120	0.85	16.8	63.5 x 120	0.85	19.2	76 x 120	0.85	21.3
270000	27T	63.5 x 120	1.00	19.6	63.5 x 120	1.00	19.6	76 x 120	1.00	21.7
330000	33T	63.5 x 120	1.20	19.7	76 x 120	1.30	21.1	76 x 140	1.20	23.4
390000	39T	76 x 120	1.50	21.3	76 x 120	1.50	21.3	90 x 140	1.50	24.9
470000	47T	76 x 120	1.80	21.4	76 x 140	1.60	24.2			
560000	56T	76 x 140	2.00	23.6	90 x 140	2.00	28.1			
680000	68T	90 x 140	2.40	26.0	90 x 140	2.40	28.5			

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

Voltage (Code)		35V (1V)			50V (1H)			63V (1J)		
SV		44			63			79		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
2700	278							35 x 50	0.20	2.3
3300	338							35 x 50	0.20	2.5
3900	398				35 x 50	0.20	2.8	35 x 50	0.20	2.8
4700	478				35 x 50	0.20	3.1	35 x 50	0.20	3.1
5600	568				35 x 50	0.20	3.3	35 x 60	0.20	3.5
6800	688				35 x 50	0.25	3.3	35 x 60	0.20	3.9
8200	828	35 x 50	0.30	3.3	35 x 60	0.25	3.8	35 x 80	0.20	4.7
10000	109	35 x 50	0.30	3.6	35 x 80	0.25	4.6	35 x 80	0.25	4.7
12000	129	35 x 60	0.30	4.2	35 x 80	0.25	5.1	35 x 100	0.25	5.5
15000	159	35 x 60	0.30	4.7	35 x 80	0.25	5.7	35 x 120	0.25	6.6
18000	189	35 x 80	0.30	5.7	35 x 100	0.25	6.7	51 x 80	0.25	7.4
22000	229	35 x 80	0.30	6.3	35 x 120	0.25	8.1	51 x 100	0.25	9.0
27000	279	35 x 100	0.30	7.5	51 x 80	0.25	9.1	51 x 120	0.25	10.9
33000	339	35 x 120	0.30	9.0	51 x 100	0.25	11.1	51 x 120	0.25	12.0
39000	399	51 x 80	0.35	9.2	51 x 120	0.25	13.1	63.5 x 100	0.30	12.5
47000	479	51 x 100	0.35	11.2	51 x 120	0.30	13.9	63.5 x 120	0.30	14.9
56000	569	51 x 100	0.40	11.4	63.5 x 100	0.35	13.9	63.5 x 120	0.30	16.3
68000	689	51 x 120	0.40	13.6	63.5 x 120	0.35	16.6	76 x 120	0.35	18.4
82000	829	63.5 x 100	0.45	14.8	76 x 120	0.40	18.9	76 x 140	0.40	20.0
100000	10T	63.5 x 120	0.45	17.6	76 x 120	0.45	19.5	76 x 140	0.50	20.0
120000	12T	63.5 x 120	0.55	17.6	76 x 120	0.55	19.5	90 x 140	0.60	21.8
150000	15T	76 x 120	0.65	19.8	90 x 140	0.60	23.9			
180000	18T	76 x 120	0.80	19.8	90 x 140	0.75	23.9			
220000	22T	76 x 140	0.80	23.4						
270000	27T	90 x 140	1.00	25.5						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

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STANDARD RATINGS

Voltage (Code)		80V (1K)			100V (2A)			160V (2C)		
SV		100			125			200		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
560	567							35 x 50	0.15	1.2
680	687							35 x 50	0.15	1.3
820	827							35 x 50	0.15	1.4
1000	108							35 x 50	0.15	1.6
1200	128							35 x 60	0.15	1.9
1500	158							35 x 60	0.15	2.1
1800	188				35 x 50	0.10	2.7	35 x 80	0.15	2.5
2200	228	35 x 50	0.15	2.4	35 x 50	0.10	3.0	35 x 80	0.15	2.8
2700	278	35 x 50	0.15	2.7	35 x 60	0.10	3.5	35 x 100	0.15	3.3
3300	338	35 x 50	0.15	3.0	35 x 80	0.10	4.2	35 x 120	0.15	3.8
3900	398	35 x 60	0.15	3.4	35 x 80	0.12	4.2	51 x 80	0.20	3.8
4700	478	35 x 60	0.15	3.7	35 x 100	0.12	5.0	51 x 100	0.20	4.6
5600	568	35 x 80	0.15	4.5	35 x 100	0.12	5.4	51 x 100	0.20	5.1
6800	688	35 x 80	0.15	4.9	35 x 120	0.15	5.8	51 x 120	0.20	6.1
8200	828	35 x 100	0.20	5.1	51 x 80	0.15	6.4	63.5 x 100	0.20	7.0
10000	109	35 x 120	0.20	6.1	51 x 100	0.15	7.8	63.5 x 120	0.20	8.4
12000	129	51 x 80	0.20	6.7	51 x 120	0.15	9.3	76 x 100	0.20	9.4
15000	159	51 x 100	0.20	8.3	51 x 120	0.15	10.4	76 x 120	0.20	11.4
18000	189	51 x 120	0.20	9.9	63.5 x 100	0.20	10.4	76 x 140	0.20	13.4
22000	229	51 x 120	0.20	11.0	63.5 x 120	0.20	12.5	90 x 140	0.25	14.5
27000	279	63.5 x 100	0.25	11.4	76 x 120	0.25	13.7	90 x 140	0.25	16.0
33000	339	76 x 100	0.25	13.9	76 x 120	0.25	15.2			
39000	399	76 x 100	0.30	13.9	76 x 140	0.30	16.1			
47000	479	76 x 120	0.30	16.5	90 x 140	0.30	19.3			
56000	569	76 x 120	0.30	18.1	90 x 140	0.30	21.1			
68000	689	76 x 140	0.35	19.7						
82000	829	90 x 140	0.40	22.1						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size φD x L (mm)

Voltage (Code)		200V (2D)			250V (2E)			315V (2F)		
SV		250			300			365		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
180	187							35 x 50	0.10	0.8
220	227							35 x 50	0.10	0.9
270	277				35 x 50	0.15	0.8	35 x 50	0.10	1.0
330	337	35 x 50	0.15	0.9	35 x 50	0.15	0.9	35 x 50	0.10	1.1
390	397	35 x 50	0.15	1.0	35 x 50	0.15	1.0	35 x 50	0.10	1.2
470	477	35 x 50	0.15	1.1	35 x 50	0.15	1.1	35 x 60	0.10	1.4
560	567	35 x 50	0.15	1.2	35 x 50	0.15	1.2	35 x 60	0.10	1.5
680	687	35 x 50	0.15	1.3	35 x 60	0.15	1.4	35 x 80	0.10	1.7
820	827	35 x 50	0.15	1.4	35 x 80	0.15	1.6	35 x 80	0.15	1.7
1000	108	35 x 60	0.15	1.7	35 x 80	0.20	1.6	35 x 100	0.15	2.0
1200	128	35 x 60	0.15	1.9	35 x 80	0.20	1.8	35 x 120	0.15	2.4
1500	158	35 x 80	0.15	2.3	35 x 100	0.20	2.1	51 x 80	0.15	2.7
1800	188	35 x 80	0.15	2.5	35 x 120	0.20	2.5	51 x 100	0.15	3.3
2200	228	35 x 100	0.15	3.0	51 x 80	0.20	2.9	51 x 120	0.15	4.0
2700	278	35 x 120	0.15	3.6	51 x 100	0.20	3.5	51 x 120	0.15	4.4
3300	338	51 x 80	0.15	4.1	51 x 120	0.20	4.2	63.5 x 100	0.15	5.1
3900	398	51 x 100	0.15	4.9	51 x 120	0.20	4.6	63.5 x 120	0.15	6.0
4700	478	63.5 x 100	0.20	5.3	63.5 x 120	0.20	5.7	76 x 100	0.15	6.8
5600	568	63.5 x 100	0.20	5.8	63.5 x 120	0.20	6.3	76 x 120	0.15	8.0
6800	688	63.5 x 120	0.20	6.9	76 x 120	0.20	7.7	76 x 130	0.15	9.2
8200	828	63.5 x 120	0.20	7.6	76 x 120	0.20	8.4	90 x 140	0.15	11.4
10000	109	76 x 120	0.20	9.3	76 x 140	0.20	10.0	90 x 140	0.15	12.6
12000	129	76 x 120	0.20	10.2	90 x 140	0.20	11.9			
15000	159	76 x 140	0.20	12.2						
18000	189	90 x 140	0.25	13.1						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size φD x L (mm)

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STANDARD RATINGS

Voltage (Code)		350V (2V)			400V (2G)			450V (2W)		
SV		400			450			500		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
470	477							51 x 80	0.15	1.4
680	687							51 x 80	0.15	1.6
1000	108				51 x 80	0.15	2.2	51 x 80	0.15	1.8
1200	128	51 x 80	0.15	2.4	51 x 80	0.15	2.5			
1500	158	51 x 80	0.15	2.8	51 x 115	0.15	3.0	51 x 115	0.15	3.5
1800	188	51 x 105	0.15	3.2						
2200	228	51 x 115	0.15	3.8	63.5 x 95	0.15	4.0	63.5 x 115	0.15	5.0
2700	278	63.5 x 95	0.15	4.5				76 x 100	0.15	5.8
3300	338				63.5 x 115	0.15	5.0	76 x 100	0.15	6.5
3900	398	76 x 90	0.15	6.0						
4700	478				76 x 115	0.15	7.0	76 x 130	0.15	8.0
5600	568	76 x 130	0.15	8.3	76 x 140	0.15	8.5	76 x 155	0.15	9.0
6800	688	76 x 140	0.15	9.5	90 x 130	0.15	10.0	90 x 155	0.15	10.5
8200	828	90 x 140	0.15	11.4				90 x 195	0.15	13.0
10000	109							90 x 195	0.15	14.0
12000	129							90 x 230	0.15	15.7
15000	159							90 x 250	0.15	18.2

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

Voltage (Code)		500V (2H)		
SV		550		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current
330	337	51 x 80	0.15	1.1
470	477	51 x 80	0.15	1.3
680	687	51 x 105	0.15	1.8
1000	108	51 x 115	0.15	2.1
1500	158	63.5 x 115	0.15	3.0
2200	228	63.5 x 130	0.15	3.7
2700	278	63.5 x 150	0.15	4.4
		76 x 115	0.15	4.4
3300	338	63.5 x 170	0.15	5.2
		76 x 155	0.15	5.2
3900	398	76 x 155	0.15	5.8
4700	478	76 x 190	0.15	6.9
		90 x 155	0.15	6.9
5600	568	90 x 155	0.15	7.2
6800	688	90 x 170	0.15	8.3
8200	828	90 x 220	0.15	10.2
10000	109	90 x 250	0.15	12.0

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

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