

SM 系列 SERIES

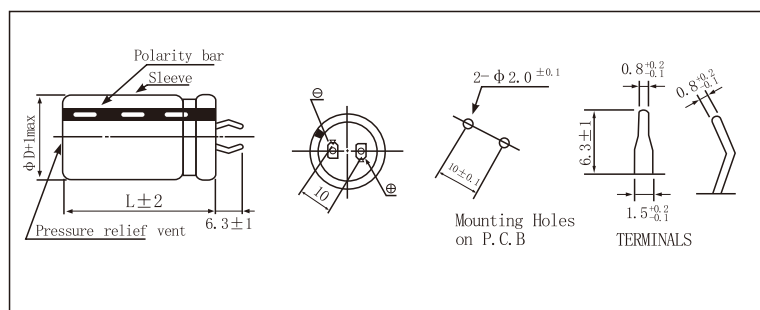
- 2000h at 85°C
- Standard 85°C



◆ SPECIFICATION

Items	Characteristics	
Operating Temperature Range(°C)	-40 ~ +85°C	-25 ~ +85°C
Voltage range (V)	10 ~ 400V	450 ~ 500V
Capacitance Range (μF)	68 ~ 82000 μF	
Capacitance Tolerance	± 20% (at 20°C, 120Hz)	
leakage current (μA)	After 5 minutes at 20°C application of rated voltage ,leakage current is not more than 0.01CV or 1.5mA, whichever is smaller , C:Nominal Capacitance (μF) V:Rated Voltage (V)	
Dissipation Factor(Tan δ)	Rated Voltage(V)	10-16 25 35-50 63 80-100
	Cap(μF)	≤2700 — — 0.2 0.15 0.15
	3300~4700	— 0.35 0.25 0.2 0.15
	5600~6800	0.4 0.35 0.3 0.2 0.2
	≥8200	0.4 0.35 0.35 0.25 —
Low Temperature Characteristics	Rated Voltage(V)	10 10-35 50-100 160-200 250-400 450-500
	Impedance	Z-25°C/Z+20°C 5 4 3 3 4
	Ratio	Z-40°C/Z+20°C 18 15 10 6 8 —
		(at 120Hz)
		(at 20°C, 120Hz)
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated rippled current is applied for 2000 hours at 85°C .	
	Capacitance change	Within ± 20%initial value
	D.F.(Tan δ)	Not more than 200% of specified value
	leakage current	Not more than specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied .Before the measurement ,the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.	
	Capacitance change	Within ± 20%initial value
	D.F.(Tan δ)	Not more than 200% of specified value
	leakage current	Not more than 200% of specified value

◆ DIMENSIONS(mm)



◆ Frequency Coefficient

Frequency	50/60Hz	120Hz	1KHz	10KHz	100KHz
Voltage(V)					
≤50	0.95	1.00	1.10	1.15	1.15
63~100	0.95	1.00	1.16	1.30	1.33
≥160	0.95	1.00	1.20	1.50	1.55

◆ Temperature Coefficient

Temperature(°C)	+40	+55	+70	+85
Rated Voltage(V)				
<160	2.10	1.80	1.50	1.00
≥160	1.70	1.50	1.30	1.00

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C 120H	Rated Ripple Current 85°C 120Hz	Size φD × L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
10 (13)	10000	54	2500	22 × 2.5
	12000	45	2900	22 × 2.5
	15000	36	3200	22 × 3.0
		36	3100	25 × 2.5
	18000	30	3600	22 × 3.5
		30	3600	25 × 3.0
	22000	25	4000	22 × 4.0
		25	4100	25 × 3.5
		25	4100	30 × 2.5
	33000	17	4600	25 × 4.0
		17	4800	30 × 3.0
		17	4800	35 × 2.5
	39000	14	5200	25 × 4.5
		14	5300	30 × 3.5
	47000	12	5800	25 × 5.0
		12	6000	30 × 4.0
		12	6000	35 × 3.0
	56000	9.5	6700	30 × 4.5
		9.5	6800	35 × 3.5
	68000	7.9	7500	30 × 5.0
		7.9	7700	35 × 4.0
16 (20)	82000	6.5	8700	35 × 4.5
	8200	65	2200	22 × 2.5
	10000	54	2600	22 × 3.0
		54	2600	25 × 2.5
	12000	45	2900	22 × 3.5
		36	3300	22 × 4.0
		36	3300	25 × 3.0
	15000	36	3400	30 × 2.5
		30	3800	22 × 4.5
		30	3700	25 × 3.5
	18000	25	4200	22 × 5.0
		25	4200	25 × 4.0
		25	4200	30 × 3.0
		25	4400	35 × 2.5
	27000	20	5000	25 × 4.5
		20	5000	30 × 3.5
	33000	17	5600	30 × 4.0
		17	5600	35 × 3.0
	39000	14	6200	30 × 4.5
		14	6300	35 × 3.5
	47000	12	7000	30 × 5.0
		12	7200	35 × 4.0
	56000	9.5	8000	35 × 4.5
25 (32)	5600	83	2000	22 × 2.5
	6800	69	2300	22 × 3.0
		69	2300	25 × 2.5
	8200	57	2600	22 × 3.5
		47	2900	22 × 4.0
	10000	47	2800	25 × 3.0
		47	3000	30 × 2.5
		39	3300	22 × 4.5
	12000	39	3200	25 × 3.5
		39	3400	30 × 3.0
		31	3700	25 × 4.0
	15000	31	3900	35 × 2.5
		26	4300	25 × 5.0
		26	4200	30 × 3.5
	18000	26	4400	35 × 3.0
		22	4800	30 × 4.0
		22	5000	35 × 3.5
	22000	22	4800	30 × 4.0
	33000	15	6500	35 × 4.0
	39000	12	7500	35 × 4.5

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20℃120H	Rated Ripple Current 85℃ 120Hz	Size φ D×L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
35 (44)	3300	100	1800	22×25
	3900	86	2100	22×30
	4700	71	2200	25×25
	5600	72	2300	22×35
		72	2300	25×30
	6800	59	2900	22×40
		59	2600	25×35
		59	2700	30×25
	8200	57	2800	22×50
		57	2800	25×40
		57	2800	30×30
		57	2900	35×25
	10000	47	3100	25×45
		47	3200	30×35
	12000	39	3500	25×50
		39	3500	30×40
		39	3600	35×30
	15000	31	4100	30×45
31		4100	35×35	
18000	26	4600	30×50	
	26	4700	35×40	
22000	22	5300	35×45	
27000	18	7000	35×50	
50 (63)	2200	120	1700	22×25
	2700	100	1900	22×30
		100	1900	25×25
	3300	100	2000	22×35
	3900	86	2100	22×35
		86	2100	25×30
		86	2400	30×25
	4700	71	2400	22×40
		71	2400	25×35
	5600	72	2500	22×50
		72	2500	25×40
		72	2500	30×30
		72	2600	35×25
	6800	59	2800	25×45
		59	2800	30×35
	8200	57	3200	25×50
		57	3300	30×40
		57	3300	35×30
	10000	47	3400	30×45
		47	3400	35×35
12000	39	3800	30×50	
	39	3800	35×40	
15000	31	4500	35×50	
63 (79)	1500	135	1600	22×25
	1800	110	1800	22×30
	2200	91	2000	22×30
		91	2000	25×25
	2700	74	2200	22×35
		74	2300	25×30
	3300	81	2300	22×40
		81	2300	25×35
		81	2300	30×25
	3900	69	2500	22×45
		69	2600	25×40
		69	2600	30×30
		69	2700	35×25
	5600	48	3100	25×45
		48	3200	30×35
		48	3300	35×30

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C 120H	Rated Ripple Current 85°C 120Hz	Size φ D × L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
63 (79) 1J	6800	40	3600	30 × 40
		40	3700	35 × 35
	8200	41	3700	30 × 50
		41	3800	35 × 40
	10000	34	4300	35 × 45
80 (100)	12000	28	4800	35 × 50
	1000	200	1300	22 × 25
	1200	165	1500	22 × 30
	1500	133	1700	25 × 25
	1800	111	1900	22 × 35
		111	1900	25 × 30
	2200	91	2100	22 × 40
		91	2200	25 × 35
		91	2200	30 × 25
	2700	74	2500	22 × 50
		74	2500	25 × 40
		74	2500	30 × 30
		74	2500	35 × 25
	3300	61	2800	25 × 45
		61	2800	30 × 35
	3900	52	3100	25 × 50
		52	3200	30 × 40
		52	3200	35 × 30
	4700	43	3600	30 × 45
		43	3600	35 × 35
	5600	48	3500	30 × 50
		48	3500	35 × 40
100 (125)	6800	40	4100	35 × 50
	680	293	1100	22 × 25
	820	243	1200	22 × 30
	1000	200	1400	25 × 25
	1200	166	1600	22 × 35
		166	1600	25 × 30
	1500	133	1800	22 × 40
		133	1700	25 × 35
		133	1800	30 × 25
	1800	111	2100	22 × 50
		111	2000	25 × 40
		111	2100	30 × 30
		111	2200	35 × 25
	2200	91	2200	25 × 45
		91	2300	30 × 35
		91	2500	35 × 30
	2700	74	2600	25 × 50
		74	2700	30 × 40
	3300	61	3000	30 × 45
		61	3100	35 × 35
	3900	52	3400	30 × 50
		52	3400	35 × 40
	4700	43	4000	35 × 50
160 (200)	220	600	1100	22 × 25
	270	490	1200	22 × 25
	330	400	1300	22 × 25
	390	341	1500	22 × 30
		341	1500	25 × 25
	470	283	1600	25 × 30
		237	1900	22 × 35
		237	1900	25 × 30
	560	237	2000	30 × 25
		196	2100	22 × 40
	680	196	2200	25 × 35

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C120H	Rated Ripple Current 85°C 120Hz	Size φD × L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
160 (200)	820	162	2500	22 × 50
		162	2400	25 × 40
		162	2500	30 × 30
		195	2400	35 × 25
	1000	133	2700	25 × 45
		133	2800	30 × 35
		160	2700	35 × 30
	1200	111	3100	25 × 50
		111	3200	30 × 40
		133	3000	35 × 35
	1500	89	3700	30 × 45
		107	3500	35 × 40
200 (250)	1800	89	3900	35 × 45
	2200	73	4500	35 × 50
	220	600	1100	22 × 25
	270	492	1200	22 × 30
	330	402	1400	22 × 30
		402	1400	25 × 25
	390	341	1600	22 × 35
		341	1600	25 × 30
	470	283	1800	22 × 40
		283	1900	30 × 25
	560	237	2000	22 × 45
		237	2000	25 × 35
		237	2100	30 × 30
		285	2000	35 × 25
	680	196	2300	25 × 40
		196	2400	30 × 35
	820	162	2600	25 × 50
		162	2700	30 × 40
		195	2500	35 × 30
	1000	133	3100	30 × 45
		160	2800	35 × 35
	1200	111	3400	30 × 50
		133	3200	35 × 40
	1500	107	3800	35 × 50
250 (300)	100	1990	680	22 × 25
	180	1106	940	22 × 25
	220	905	1100	22 × 30
		905	1100	25 × 25
	270	737	1400	22 × 35
	330	603	1400	22 × 40
		603	1400	25 × 30
		603	1500	30 × 25
	390	511	1600	22 × 45
		511	1600	25 × 35
	470	424	1800	22 × 50
		424	1800	25 × 40
		424	1800	30 × 30
		424	2400	35 × 25
	560	356	2000	25 × 45
		356	2000	30 × 35
	680	293	2300	30 × 40
		293	2600	35 × 30
	820	243	2600	30 × 45
		243	2600	35 × 35
	1000	199	3200	35 × 40
	1200	166	3400	35 × 45
315 (365)	100	1990	670	22 × 25
	150	1327	850	22 × 30
		1327	850	25 × 25
	180	1106	960	22 × 35
		1106	960	25 × 30

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C120H	Rated Ripple Current 85°C 120Hz	Size φD×L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
315 (365)	220	905	1100	22×40
		905	1100	25×35
		905	1100	30×25
	270	737	1200	22×45
		737	1300	25×40
		737	1300	30×30
		737	1300	35×25
	330	603	1400	25×45
		603	1400	30×35
	390	511	1600	25×50
		511	1600	30×40
		511	1600	35×30
	470	424	1800	30×45
		424	1800	35×35
350 (400)	560	356	2000	30×50
		356	2000	35×40
	680	293	2300	35×45
	82	2427	640	22×25
	100	1990	800	22×25
	120	1658	820	22×30
		1658	810	25×25
	150	1327	940	22×35
		1327	940	25×30
	180	1106	1100	22×40
		1106	1100	30×25
	220	905	1200	22×45
		905	1200	25×35
		905	1200	30×30
		905	1300	35×25
	270	737	1400	25×45
		737	1400	30×35
	330	603	1600	25×50
		603	1600	35×30
	390	511	1700	30×40
		511	1800	35×35
	470	424	2000	30×45
		424	2000	35×40
400 (450)	560	356	2300	35×45
	680	293	2600	35×50
	820	243	2800	35×60
	68	2926	550	22×25
	82	2427	650	22×25
	100	1990	700	22×30
		1990	700	25×25
	120	1658	790	22×35
	150	1327	900	22×40
		1327	890	25×30
		1327	950	30×25
	180	1106	1000	22×45
		1106	1000	25×35
		1106	1100	30×30
		1106	1200	35×25
	220	905	1100	22×50
		905	1200	25×40
		905	1200	30×35
	270	737	1300	25×45
		737	1400	25×50
		737	1500	30×40
	330	603	1600	35×30
		603	1700	30×45
	390	511	1800	35×35
		511	1800	30×50
	470	424	2100	35×45
	560	356	2300	35×50
	1000	335	2500	35×70

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capacitance	Max ESR 20℃120H	Rated Ripple Current 85℃ 120Hz	Size φ D × L
(V)	(μF)	(mΩ)	(mA rms)	(mm)
450 (500)	68	2926	570	22 × 30
	82	2427	680	25 × 25
	100	1990	720	22 × 35
		1990	730	25 × 30
	120	1658	800	22 × 40
		1658	830	25 × 35
	150	1327	950	25 × 40
		1327	950	30 × 30
		1327	980	35 × 25
	180	1106	1100	25 × 45
		1106	1100	30 × 35
		1106	1200	35 × 25
	220	905	1200	25 × 50
		905	1300	30 × 40
		905	1300	35 × 30
	270	737	1400	30 × 45
		737	1500	35 × 35
	330	603	1700	30 × 50
	390	511	1900	35 × 45
500 (550)	470	424	2200	35 × 50
	100	1990	900	30 × 25
	120	1658	1000	30 × 30
		1658	1000	35 × 25
	150	1327	1200	30 × 35
	180	1106	1400	30 × 40
		1106	1300	35 × 30
	220	905	1600	30 × 45
		905	1500	35 × 35
	270	737	1800	30 × 50
		737	1700	35 × 40
	330	603	2000	35 × 45
	390	511	2300	35 × 50