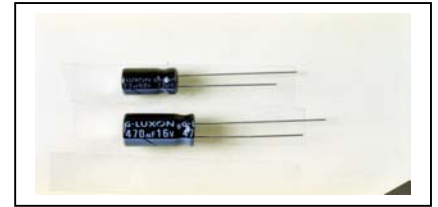


SM Series

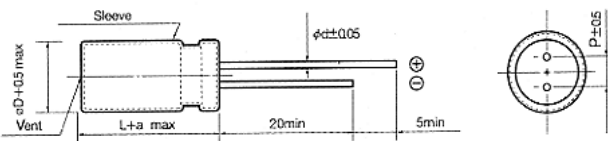
- | | |
|--|---|
| <ul style="list-style-type: none"> ■ Features • Lifetime: 105°C, 2000hrs • Wide temperature range for GR • General purpose | <ul style="list-style-type: none"> ■ Recommended Applications • AV(TV, Video, Audio) • Monitor/Computer • OA/HA/Communication |
|--|---|



Specifications

Items	Characteristics															
Capacitance Tolerance	±20% (M) (120Hz, 20°C)															
Rated Voltage Range (WV)	6.3~100 VDC										160~400 VDC / 450 VDC					
Operating Temperature Range	-55 ~ +105°C										-40 ~ +105°C / -25 ~ +105°C					
Surge Voltage (V) (20°C)	WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	SV	8	13	20	32	44	63	79	125	200	250	300	400	450	500	
Leakage Current (Max) (20°C)	I ≤ 0.01CV or 3 μA whichever is greater (After rated voltage applied for 2 minutes)										I ≤ 0.03CV + 10 μA (After rated voltage applied for 3 minutes)					
	I = Leakage Current (μA) C = Nominal Capacitance (μF) V = Rated Voltage (V)															
Dissipation Factor (Max) (tan δ) (120Hz, 20°C)	WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	tan δ	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.15	0.15	0.15	0.20	0.20	0.20	
When nominal capacitance is over 1000 μF, tan δ shall be added 0.02 to the listed value with increase of every 1000 μF.																
Low Temperature Stability Impedance Ratio (Max)	WV		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	Z(120Hz)															
	Z(-25°C) / Z(20°C)			4	3	2	2	2	2	2	2	3	3	3	4	4
Z(-40°C) / Z(20°C)			8	6	4	4	3	3	3	3	-	-	-	-	-	-
Load Life	After applying rated voltage for 2000 hours at 105°C, the capacitor shall meet the following requirement.															
	Capacitance Change					Within ±20% of the initial value										
	Dissipation Factor					Not more than 200% of the specified value										
	Leakage Current					Not more than the specified value										
Shelf Life	After placed at 105°C without voltage applied for 1000 hours, the capacitor shall meet the same requirement as load life.															
Applicable standards	Refer to JIS C 5101															

Dimensions (mm)



φ D	5	6.3	8	10	13	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φ d	0.5	0.5	0.6	0.6	0.6 (0.8)	0.8	0.8
a	1.0	1.0	1.0	1.0	2.0	2.0	2.0

() : L ≥ 30

Multiplier for Ripple Current

Frequency coefficient

WV (VDC)	Freq. (Hz)	50	120	1K	10K~100K
6.3~100	Cap (μF)				
	0.1~82	0.75	1.00	1.57	2.00
	100~820	0.80	1.00	1.34	1.50
160~450	1000~22000	0.85	1.00	1.13	1.15
	0.47~330	0.80	1.00	1.40	1.60

Temperature coefficient

Ambient Temperature (°C)	≤ 50	70	85	105
Coefficient	1.90	1.75	1.40	1.00

Case Size / Max Ripple Current

CASE SIZE (ϕ DxL(mm)) / MAX PERMISSIBLE RIPPLE CURRENT (RC(mArms) / 120Hz,105°C)

WV SPEC μ F	6.3		10		16		25		35		50		63	
	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC
0.1											5x11	5	5x11	5
0.22											5x11	5	5x11	5
0.33											5x11	10	5x11	10
0.47											5x11	10	5x11	15
1											5x11	20	5x11	20
2.2											5x11	25	5x11	25
3.3											5x11	30	5x11	35
4.7							5x11	35	5x11	40	5x11	45	5x11	50
10					5x11	45	5x11	50	5x11	50	5x11	55	5x11	60
22			5x11	60	5x11	65	5x11	70	5x11	75	5x11	85	6.3x11	95
33	5x11	60	5x11	70	5x11	75	5x11	85	5x11	95	6.3x11	105	8x11	120
47	5x11	75	5x11	85	5x11	95	5x11	105	6.3x11	120	6.3x11	135	8x11	160
100	5x11	110	5x11	130	6.3x11	155	6.3x11	160	8x11	190	8x11	220	10x12.5	290
220	6.3x11	190	6.3x11	210	8x11	215	8x11	270	10x15	350	10x17	400	10x20	470
330	8x11	270	8x11	290	8x11	300	8x14	365	10x17	450	10x20	520	13x20	630
470	8x11	330	8x11	340	8x11	365	10x15	510	10x20	610	13x20	705	13x25	790
680	8x14	410	8x14	440	8x14	460	10x17	555	10x20	725	13x20	815	16x26	1030
1000	10x12.5	440	10x15	560	10x17	645	10x20	715	13x25	935	13x30	1040	16x32	1320
1500	10x17	620	10x17	640	13x20	800	13x25	1040	16x26	1160	16x32	1410	16x36	1470
2200	10x20	750	10x20	810	13x20	970	16x26	1280	16x32	1470	16x36	1570		
3300	13x20	1040	13x20	1060	13x25	1240	16x32	1570	16x36	1700				
4700	13x20	1140	13x25	1490	13x30	1560	16x36	1790						
6800	16x26	1590	16x26	1620	16x32	1890								
10000	16x36	1950	18x36	2180	18x36	2220								
15000	18x36	2340	18x36	2410										
22000	18x40	2560												

WV SPEC μ F	100		160		200		250		350		400		450	
	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC	ϕ DxL	RC
0.47	5x11	15	5x11	15	5x11	15	6.3x11	20	6.3x11	20	8x11	25	8x11	25
1	5x11	25	5x11	25	5x11	25	6.3x11	25	6.3x11	25	8x11	30	8x11	30
2.2	5x11	30	6.3x11	35	6.3x11	35	8x11	40	8x11	45	10x12.5	50	10x12.5	50
3.3	5x11	35	8x11	45	8x11	50	8x11	50	10x12.5	65	10x15	70	10x15	75
4.7	5x11	50	8x11	55	8x11	60	10x12.5	70	10x12.5	75	10x17	85	10x17	95
10	6.3x11	70	10x15	100	10x17	120	10x17	120	10x17	130	10x20	135	13x20	170
22	8x11	110	10x17	155	10x20	170	10x20	190	13x20	215	13x25	240	16x26	300
33	10x15	160	10x20	195	13x20	255	13x25	305	13x25	310	16x26	360	16x36	425
47	10x15	215	13x20	265	13x25	305	13x25	340	16x26	375	16x36	435	18x36	545
100	10x20	305	16x26	475	16x26	485	16x32	530	18x36	580	18x36	680		
220	13x30	605	16x32	650	18x36	765								
330	16x26	700	18x40	910										
470	16x36	990												
680	18x36	1270												
1000	18x45	1740												