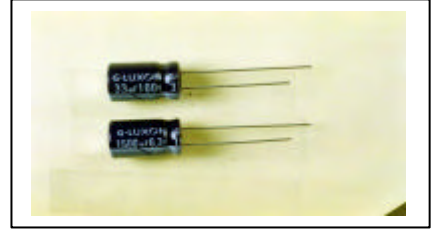


GR Series

Features
 Lifetime: 85, 2000hrs
 General purpose

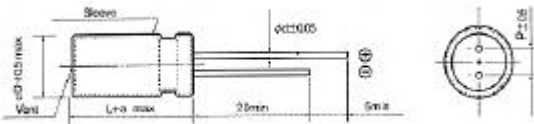
Recommended Applications
 AV(TV, Video, Audio)
 Monitor/Computer
 OA/HA/Communication



Specifications

Items	Characteristics																
Capacitance Tolerance	± 20% (M) (120Hz, 20)																
Rated Voltage Range (WV)	6.3~100VDC										160~450VDC						
Operating Temperature Range	-40 ~ +85										-25 ~ +85						
Surge Voltage (V) (20)	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)	I = 0.01CV or 3 μ A whichever is greater (After rated voltage applied for 2 minutes)										I = 0.03CV + 10 μ A (After rated voltage applied for 3 minutes)						
	I = Leakage Current (μ A) C = Nominal Capacitance (μ F) V = Rated Voltage (V)																
Dissipation Factor (Max) (tan) (120Hz, 20)	WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450		
	tan	0.24	0.20	0.16	0.14	0.12	0.10	0.10	0.10	0.10	0.20	0.20	0.20	0.24	0.24	0.24	
When nominal capacitance is over 1000 μ F, tan shall be added 0.02 to the listed value with increase of every 1000 μ F.																	
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) / Z(20)			4	3	2	2	2	2	2	2	3	3	3	4	4	4
Z(-40) / Z(20)			8	6	4	4	3	3	3	3	-	-	-	-	-	-	
Load Life	After applying rated voltage for 2000 hours at 85 , 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 85 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)



D	5	6.3	8	10	13	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
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
6.3~100	0.1~82	0.75	1.00	1.57	2.00
	100~820	0.80	1.00	1.34	1.50
	1000~22000	0.85	1.00	1.13	1.15
160~450	0.47~1000	0.80	1.00	1.40	1.60

Temperature coefficient

Ambient Temperature ()	50	70	85
Coefficient	1.36	1.25	1.00

Case Size & Max Ripple Current

CASE SIZE (DxL(mm)) & MAX PERMISSIBLE RIPPLE CURRENT (RC(mArms) / 120Hz,85)

WV	6.3		10		16		25		35		50		63	
μF \ SPEC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC
0.1											5x11	1	5x11	1
0.22											5x11	2	5x11	2
0.33											5x11	3	5x11	3
0.47											5x11	5	5x11	5
1											5x11	10	5x11	10
2.2											5x11	20	5x11	20
3.3											5x11	30	5x11	30
4.7							5x11	45	5x11	45	5x11	50	5x11	50
10					5x11	50	5x11	55	5x11	60	5x11	70	5x11	75
22	5x11	65	5x11	75	5x11	75	5x11	85	5x11	95	5x11	100	5x11	120
33	5x11	80	5x11	85	5x11	95	5x11	105	5x11	110	5x11	130	6.3x11	145
47	5x11	95	5x11	105	5x11	110	5x11	120	5x11	135	6.3x11	170	8x11	195
100	5x11	135	5x11	155	5x11	160	6.3x11	195	6.3x11	220	8x11	270	10x12.5	325
220	5x11	240	6.3x11	255	8x11	265	8x11	330	10x15	390	10x17	500	10x20	580
330	6.3x11	300	8x11	355	8x11	375	8x14	450	10x17	500	10x20	600	13x20	780
470	6.3x11	390	8x11	425	8x11	450	10x15	640	10x20	760	13x20	880	13x25	990
1000	10x12.5	550	10x12.5	665	10x17	800	10x20	900	13x25	1170	13x30	1360	16x32	1770
2200	10x20	935	10x20	1000	13x20	1200	13x25	1450	16x32	1840	16x36	1940	18x40	2170
3300	13x20	1290	13x20	1330	13x25	1550	16x26	1850	16x36	2130	18x40	2460		
4700	13x20	1420	13x25	1850	13x30	1880	16x36	2360	18x36	2530				
6800	16x26	1980	16x26	2030	16x32	2360	16x40	2540						
10000	16x36	2170	18x36	2390										
15000	18x36	2430	18x36	2630										
22000	18x40	2650	18x45	2900										

WV	100		160		200		250		350		400		450	
μF \ SPEC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC	DxL	RC
0.47	5x11	5	5x11	5	5x11	5	5x11	5	5x11	5	6.3x11	5	6.3x11	5
1	5x11	10	5x11	15	5x11	15	6.3x11	15	6.3x11	15	6.3x11	15	8x11	15
2.2	5x11	20	6.3x11	30	6.3x11	30	6.3x11	30	8x11	30	8x11	30	10x12.5	30
3.3	5x11	30	6.3x11	45	6.3x11	45	8x11	45	8x14	45	10x15	45	10x15	45
4.7	5x11	50	6.3x11	55	8x11	70	8x11	70	10x12.5	70	10x15	70	10x17	70
10	6.3x11	85	10x15	120	10x17	135	10x17	145	10x17	155	10x20	170	13x20	180
22	8x11	135	10x17	190	10x17	205	10x20	230	13x20	265	13x25	305	16x26	365
33	10x15	195	10x20	240	13x20	300	13x25	360	13x25	365	16x26	430	16x36	530
47	10x15	265	13x20	325	13x25	385	13x25	420	16x26	460	16x26	470		
100	10x20	385	16x26	600	16x26	610	16x32	650	18x36	700	18x36	850		
220	13x30	750	16x32	810	18x36	960	18x36	1020						
330	16x26	870	18x36	1090	18x40	1360								
470	16x36	1190	18x45	1510										
1000	18x45	2140												