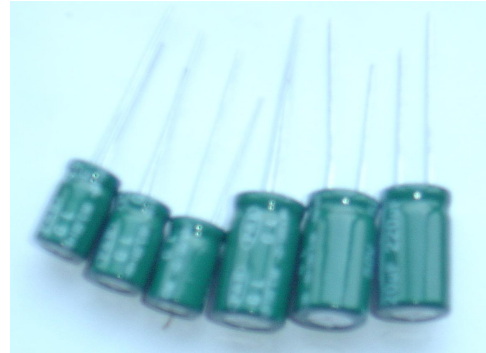


GL 105°C Low ESR Series

Features

■ Applicable Standard

JIS C 5102 & JIS C 5141.



■ Rated Working Voltage Range & Operation Temperature Range

6.3 to 100 v DC/ -40 to +105°C, 160 to 450 v DC/ -25 to +105°C.

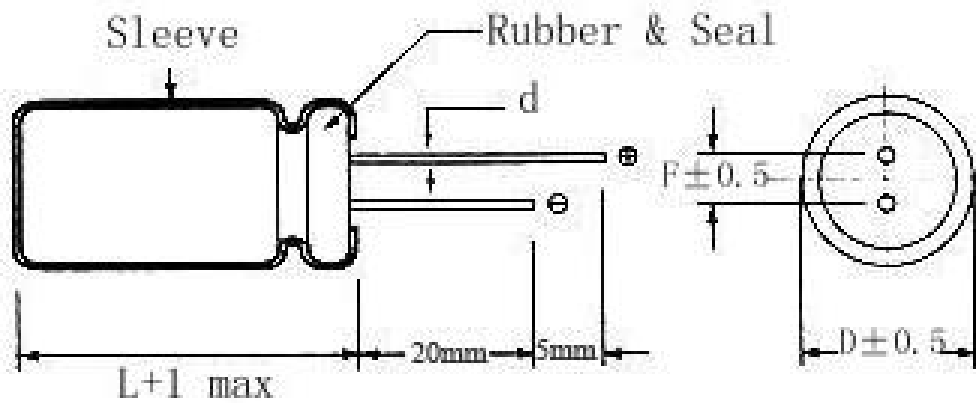
■ This series have the characteristics of low impedance at high frequency and is compliant with the requirement of RoHS. It is widely used for switching power supply, such as computer power supply, adapters for mobiles and notebook PC, power supply of LED lamps, and other power circuits for electronic products, etc.

■ Specifications

Item	Performance Characteristics				
Rated Working Voltage Range	6.3 to 450v DC				
Operating Temperature Range	6.3 to 100 v /-40 to +105°C, 160 to 450 v / -25 to +105°C				
Nominal Capacitance Range	0.47 to 15000uF				
Capacitance Tolerance	± 20%(120Hz, +20°C)				
Leakage Current	$I_L \leq 0.03CV$ or $4(\mu A)$ Whichever is bigger				
	Measuring after 1 minutes with rated working voltage applied at +20°C				
$tg \delta$ (120Hz,+20°C)	Working Voltage (v)	6.3	10	16	25
	$tg \delta$ (max.)	0.22	0.19	0.16	0.14

tg δ (120Hz,+20°C)	Working Voltage (v)	35	50	63	100	
	tg δ (max.)	0.12	0.10	0.09	0.08	
	Working Voltage (v)	160 to 250		350	400 to 450	
	tg δ (max.)	0.15		0.20	0.25	
	For capacitance value > 1000uF, add 0.02 per another 1000uF.					
Stability at low temperature	Impedance ratio max.					
	Working Voltage(VDC)	6.3	10	16	25	35
	-25°C/+20°C	4	3	2	2	1.5
	-40°C/+20°C	6	4	3	3	2
	Working Voltage(VDC)	50	63	100	160	200
	-25°C/+20°C	1.5	1.5	1.5	3	3
	-40°C/+20°C	2	2	2	4	4
	Working Voltage(VDC)	250	350	400	450	
	-25°C/+20°C	3	4	6	15	
	-40°C/+20°C	6	8	10	---	
For capacitance value > 1000uF: add 0.5 per another 1000uF for -20°C/+20°C add 1.0 per another 1000uF for -40°C/+20°C						
Load Life	<p>Test conditions: Duration: 8000 hours Ambient temperature: +105°C Applied: DC voltage with maximum permissible ripple current should be equal to rated working voltage.</p> <p>Pos test requirement at +20°C Leakage current: \leqInitial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. tg δ : $\leq 200\%$ of initial measured value.</p>					
Shelf Life	<p>Test conditions: Duration: 8000 hours Ambient temperature: +105°C Applied: (None)</p> <p>Post test requirement at +20°C Leakage current: \leqInitial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. tg δ : $\leq 200\%$ of initial measured value.</p>					

■ Diagram of Dimension (Unit: mm)



$\Phi D \pm 0.5$	5	6	8	10	12	13	16	18	22
$F \pm 0.5$	2.0	2.5	3.5	5.0			7.5	7.5	10
ϕd	0.5		0.6	0.6			0.8		

■ Dimensions (D×L mm)

WV (SV) Cap(uF)	6.3 (8)			10 (13)			16 (20)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
10							5×11	180	0.60
15							5×11	180	0.60
22	5×11	180	0.60	5×11	180	0.60	5×11	180	0.60
33	5×11	180	0.60	5×11	180	0.60	5×11	180	0.60
47	5×11	180	0.60	5×11	180	0.60	5×11	180	0.60
56	5×11	180	0.60	5×11	180	0.60	5×11	180	0.60
68	5×11	180	0.60	5×11	180	0.60	5×11	180	0.60
82	5×11	180	0.60	5×11	180	0.60	5×11	235	0.50
100	5×11	180	0.60	5×11	180	0.60	5×11	290	0.025
150	5×11	235	0.50	5×11	290	0.25	5×11	290	0.025
180	5×11	240	0.50	5×11	290	0.25	6×11	430	0.023
220	5×11	290	0.25	5×11	290	0.25	6×11	555	0.117
330	6×11	290	0.25	6×12	550	0.117	6×11	555	0.117
470	6×11	555	0.117	6×12	550	0.117	8×12	760	0.090
560	6×11	555	0.117	6×11	550	0.117	8×12	760	0.090
680	8×12	735	0.090	8×12	730	0.085	8×14	1050	0.068
820	8×12	755	0.085	8×12	730	0.085	8×16	1220	0.052

wv (SV) Cap(uF)	6.3 (8)			10 (13)			16 (20)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
1000	8×12	755	0.090	8×12	995	0.065	10×13	1220	0.052
1500	10×13	1220	0.052	10×13	1220	0.052	10×13	1655	0.038
2200	10×16	1440	0.045	10×16	1655	0.038	10×16	1945	0.030
2700	10×16	1815	0.035	10×16	1930	0.036	10×20	2210	0.029
3300	10×20	1655	0.038	10×16	1950	0.032	10×20	2520	0.024
4700	12×21	2310	0.025	10×20	2500	0.026	12×21	2700	0.020
6800	13×21	2560	0.022	13×21	3960	0.021	16×26	3660	0.16
8200	16×26	3010	0.018	13×21	3150	0.018	16×26	3680	0.015
10000	16×32	3150	0.016	16×26	3640	0.16	16×32	3800	0.014
15000	18×32	3680	0.015	18×40	3800	0.014	18×36		

wv (SV) Cap(uF)	25 (32)			35 (44)			50 (63)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
0.47							5×11	25	5.00
1							5×11	40	3.50
2.2							5×11	55	3.00
3.3							5×11	65	2.60
4.7	5×11	180	0.60	5×11	180	0.60	5×11	90	2.30
5.6	5×11	180	0.60	5×11	180	0.60	5×11	98	2.18
6.8	5×11	180	0.60	5×11	180	0.60	5×11	113	1.97
8.2	5×11	180	0.60	5×11	180	0.60	5×11	117	1.63
10	5×11	180	0.60	5×11	180	0.60	5×11	120	1.40
15	5×11	180	0.60	5×11	180	0.60	5×11	145	1.30
22	5×11	180	0.60	5×11	180	0.60	5×11	170	1.20
33	5×11	180	0.60	5×11	180	0.60	5×11	260	0.89
47	5×11	180	0.60	5×11	230	0.52	6×12	300	0.53
56	5×11	180	0.60	5×11	290	0.045	6×12	360	0.45
68	5×11	235	0.50	6×11	310	0.042	6×12	390	0.40
82	6×11	290	0.25	6×11	390	0.035	6×12	485	0.324
100	6×11	290	0.25	6×11	555	0.117	8×12	635	0.238
150	6×11	555	0.117	8×12	555	0.117	8×12	615	0.193
180	6×11	555	0.117	8×12	555	0.117	8×14	850	0.148

wv (SV) Cap(uF)	25 (32)			35 (44)			50 (63)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
220	8×12	555	0.117	8×16	730	0.085	8×16	790	0.124
330	8×12	730	0.090	10×13	1010	0.072	10×13	1030	0.116
470	8×12	1020	0.080	10×13	1220	0.052	10×16	1430	0.078
560	10×13	1190	0.059	10×13	1440	0.045	10×16	1780	0.064
680	10×16	1220	0.052	10×16	660	0.038	10×20	1830	0.053
820	10×16	1440	0.045	10×20	710	0.035	12×21	2420	0.044
1000	10×20	1660	0.038	12×21	1950	0.030	13×26	2220	0.036
1500	12×21	1950	0.030	13×21	2550	0.022	13×26	2600	0.029
1800	12×21	2210	0.029	13×21	2555	0.021	13×26	2930	0.025
2200	13×21	2490	0.027	13×26	2740	0.020	16×32	3100	0.023
2700	13×26	2555	0.023	16×26	3150	0.016	16×32		
3300	16×26	2740	0.020	16×32	3680	0.015	18×36		
4700	16×32	3680	0.016	18×32	3800	0.014	22×36		
6800	18×36	3800	0.014						

wv (SV) Cap(uF)	63 (79)			wv (SV) Cap(uF)	100 (79)		
	Si ze	Ri ppl e	Impedance		Si ze	Ri ppl e	Impedance
0.47				0.47	5×11	20	43.0
1				1	5×11	30	20.0
2.2				2.2	5×11	44	9.80
3.3				3.3	5×11	58	6.60
4.7	5×11	68	4.70	4.7	5×11	74	4.60
5.6	5×11	82	3.20	5.6	5×11	82	3.93
6.8	5×11	95	2.50	6.8	5×11	95	3.50
8.2	5×11	105	2.30	8.2	5×11	110	2.46
10	5×11	110	2.10	10	6×11	130	1.80
15	5×11	145	2.00	15	6×11	160	1.28
22	5×11	210	1.30	22	6×11	205	0.790
33	6×11	250	0.095	33	6×11	306	0.632
47	6×11	360	0.071	47	8×12	380	0.049
56	8×12	385	0.042	56	8×12	426	0.045
68	8×12	405	0.342	68	8×12	460	0.041

wv (SV) Cap(uF)	63 (79)			wv (SV) Cap(uF)	100 (125)		
	Si ze	Ri ppl e	Impedance		Si ze	Ri ppl e	Impedance
82	8× 12	476	0.294	82	8× 12	510	0.035
100	8× 12	535	0.265	100	8× 16	580	0.027
150	10× 13	620	0.210	150	10× 13	670	0.019
180	10× 13	805	0.163	180	10× 13	730	0.015
220	10× 16	885	0.147	220	10× 16	865	0.013
330	10× 20	1180	0.102	330	10× 20	998	0.100
470	13× 21	1690	0.086	470	13× 21	1260	0.082
560	13× 26	1890	0.072	560	13× 26	1320	0.070
680	13× 26	2160	0.059	680	13× 26	1410	0.064
820	16× 26	2560	0.047	820	16× 26	1470	0.059
1000	16× 26	2730	0.043	1000	18× 26	1510	0.052
1500	16× 32	2900	0.035				
1800	18× 32	3000	0.032				
2200	18× 36	3100	0.030				

wv (SV) Cap(uF)	160 (200)			200 (250)			250 (300)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
1	6× 11	45	7.85	6× 11	45	7.76	6× 11	50	6.54
2.2	6× 11	55	5.21	6× 11	55	5.18	6× 11	64	5.12
3.3	8× 12	70	4.31	8× 12	71	4.25	8× 12	71	4.62
4.7	8× 12	72	4.16	8× 12	78	5.00	8× 12	85	3.67
10	10× 13	115	2.78	10× 13	124	3.02	8× 16	141	2.05
22	10× 16	196	1.46	10× 13	174	2.63	10× 16	175	1,49
33	10× 20	245	1.24	10× 20	280	1.96	10× 20	225	1.25
47	10× 20	296	0.98	13× 21	360	1.02	13× 21	365	0.69
100	13× 21	460	0.64	13× 26	626	0.86	16× 26	490	0.45
220	16× 26	783	0.31	16× 26	975	0.64	18× 32	750	0.31
330	18× 32	890	0.23						

wv (SV) Cap(uF)	350 (400)			400 (450)			450 (500)		
	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance	Si ze	Ri ppl e	Impedance
1	6× 11	50	7.90	6× 11	30	20.50	8× 12	41	17.35
2.2	8× 12	72	5.30	6× 11	42	15.20	8× 12	60	12.89
3.3	8× 12	75	4.65	8× 12	86	12.00	10× 13	79	10.00
4.7	8× 12	85	4.02	8× 12	92	10.80	10× 16	96	6.34
10	10× 13	138	2.83	10× 16	160	5.60	10× 20	146	4.67
22	10× 16	178	2.00	10× 20	268	3.45	13× 21	2130	2.69
33	10× 20	220	1.64	13× 21	409	2.31	16× 26	450	2.20
47	10× 20	269	1.22	16× 26	530	1.65	18× 32	650	1.38
100	13× 21	365	0.89	18× 32	880	0.86	18× 36	790	0.85
220	16× 26	560	0.57						

* Remarks: Ripple= Ripple Current(mA rms) at 105°C 100KHz
Impedance= Max Impedance(Ω) at 20°C 100KHz

* The sizes of e-cap. will be changed as a result of the raw materials being continuously developed and improved. The sizes of e-cap. are subject to change without notice, and so the sizes are based on our offering samples.