GP series

■ 105℃ 2000Hrs

Standar , load life of 2000 hrs at 105℃ .

Specifications

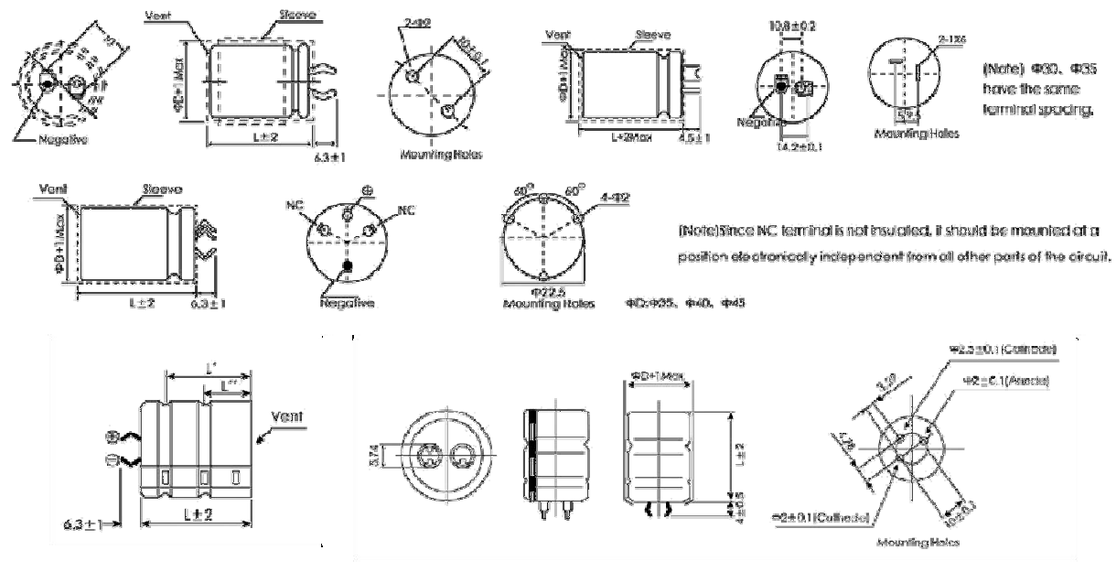
<table>
<tr><td>Item</td><td colspan="2">Performance Characteristics</td></tr>
<tr><td>Operating Temperature Range</td><td>-40~+105℃</td><td>-25~+105℃</td></tr>
<tr><td>Rated Voltage Range</td><td>16~100V</td><td>160~500V</td></tr>
<tr><td>Nominal Capacitance Range</td><td colspan="2">39~47000μF</td></tr>
<tr><td>Capacitance Tolerance</td><td colspan="2">±20%(120Hz,+25℃)</td></tr>
<tr><td>Leakage Current</td><td colspan="2">I ≤ 0.01CV or 1.5mA (after 5 minutes , Whichever is smaller)</td></tr>
<tr><td>Dissipation Factor
(+25℃ ,120Hz)</td><td colspan="2">
<table>
<tr><td>U_R(V)</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63~100</td><td>160~400</td><td>450~500</td></tr>
<tr><td>tgδ</td><td>0.50</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.20</td><td>0.15</td><td>0.20</td></tr>
</table>
</td></tr>
<tr><td>Temperature Characteristics
(Impedance ratio at 120Hz)</td><td colspan="2">
<table>
<tr><td>U_R(V)</td><td>16~100</td><td>160~200</td><td>250~500</td></tr>
<tr><td>Z-25℃ /+20℃</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td>Z-40℃ /+20℃</td><td>15</td><td>-</td><td>-</td></tr>
</table>
</td></tr>
<tr><td>Load Life</td><td colspan="2">After applying rated voltage with specified ripple current for 2000 hours at +105℃ and then resumed 24 hours:
Capacitance change : ±20% of the initial measured value
Leakage current : ≤ the initial specified value
Dissipation factor : ≤ 2 200% of the initial specified value</td></tr>
<tr><td>Shelf Life</td><td colspan="2">After storage for 1000 hours at +105℃ ,U_R to be applied for 30 minutes and then resumed 24 hours:
Capacitance change : ±15% of the initial measured value
Leakage current : ≤ the initial specified value
Dissipation factor : ≤ 200% of the initial specified value</td></tr>
</table>

Snap-in

GP series

Diagram of Dimensions

Unit: mm



Multiplier for Ripple Current

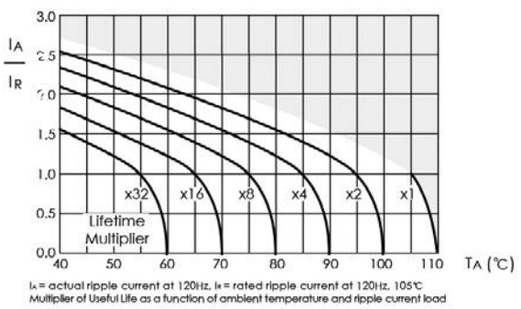
Frequency coefficient

U(V) \ Frequency (Hz)	50	120	1K	10K	≥ 20K
≤ 100	0.95	1.00	1.10	1.15	1.15
160~250	0.87	1.00	1.11	1.18	1.20
≥ 350	0.80	1.00	1.14	1.14	1.20

Temperature coefficient

Temperature (℃)	+40	+55	+70	+85	+105
Coefficient	2.7	2.5	2.1	1.7	1.0

Lifetime Diagram



IA = actual ripple current at 120Hz, IR = rated ripple current at 120Hz, 105℃
Multiplier of Useful Life as a function of ambient temperature and ripple current load

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
16 1C	20	6800	98	68	1.6	22×25
		10000	66	46	1.99	22×30
			66	46	1.99	25×25
		12000	55	39	2.28	22×35
			55	39	2.3	25×30
			55	39	2.38	30×25
		15000	44	31	2.64	22×40
			44	31	2.68	25×35
		18000	37	26	2.98	22×45
			37	26	3.04	25×40
			37	26	3	30×30
			37	26	3.1	35×25
		22000	30	21	3.4	25×45
			30	21	3.39	30×35
		27000	25	17	3.81	25×50
			25	17	3.83	30×40
			25	17	3.74	35×30
		33000	20	14	4.3	30×45
			20	14	4.24	35×35
		39000	17	12	4.74	30×50
			17	12	4.72	35×40
		47000	14	10	5.27	35×45
25 1E	32	4700	113	79	1.55	22×25
		6800	78	55	1.91	22×30
			78	55	1.91	25×25
		8200	65	45	2.14	22×35
			65	45	2.16	25×30
			65	45	2.25	30×25
		10000	53	37	2.4	22×40
			53	37	2.44	25×35
		12000	44	31	2.69	22×45
			44	31	2.74	25×40
			44	31	2.7	30×30
			44	31	2.8	35×25
		15000	35	25	3.15	25×45
			35	25	3.13	30×35
			35	25	3.22	35×30
		18000	30	21	3.54	25×50
			30	21	3.54	30×40
		22000	24	17	4.24	30×45
			24	17	3.96	35×35
		27000	20	14	4.75	35×45
		33000	16	11	5.39	35×50
35	44	3300	141	99	1.43	22×25
		3900	119	83	1.65	22×30
		4700	99	69	1.78	25×25
			83	58	2.02	22×35

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
35 1V	44	8200	57	40	2.67	22×50
			57	40	2.6	25×40
			57	40	2.56	30×30
			57	40	2.78	35×25
		10000	46	33	2.92	25×45
			46	33	2.92	30×35
		12000	39	27	3.26	25×50
			39	27	3.28	30×40
			39	27	3.2	35×30
		15000	31	22	3.74	30×45
			31	22	3.69	35×35
		18000	26	18	4.16	35×40
		22000	21	15	4.92	35×50
50 1H	63	1800	221	155	1.31	22×25
		2200	181	127	1.45	22×30
		2700	147	103	1.7	22×30
			147	103	1.7	25×25
		3300	121	84	1.98	22×35
			121	84	2	25×30
		3900	102	72	2.25	22×40
			102	72	2.28	25×35
			102	72	2.22	30×25
		4700	85	59	2.56	22×45
			85	59	2.58	30×30
			85	59	2.67	35×25
		5600	71	50	2.89	22×50
			71	50	2.81	25×40
			71	50	2.95	30×35
		6800	59	41	3.37	25×50
			59	41	3.39	30×40
			59	41	3.31	35×30
		8200	49	34	3.71	30×45
			49	34	3.66	35×35
		10000	40	28	4.09	30×50
			40	28	4.07	35×40
		12000	33	23	4.5	35×45
63 1J	79	1200	221	155	1.25	22×25
		1800	147	103	1.52	22×30
			147	103	1.52	25×25
		2200	121	84	1.73	22×35
			121	84	1.75	25×30
		2700	98	69	1.97	22×40
			98	69	1.99	25×35
			98	69	1.93	30×25
		3300	80	56	2.32	22×50
			80	56	2.27	25×40
			80	56	2.24	30×30
			80	56	2.41	35×25
		3900	68	48	2.54	25×45
			68	48	2.55	30×35
		4700	57	40	2.88	25×50
			57	40	2.9	30×40
			57	40	2.83	35×30
		5600	47	33	3.28	30×45
			47	33	3.24	35×35
		6800	39	27	3.73	30×50
			39	27	3.71	35×40

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
80 1K	100	820	324	227	1.11	22×25
		1000	266	186	1.25	22×25
		1200	221	155	1.39	22×30
			221	155	1.39	25×25
		1500	177	124	1.61	22×35
			177	124	1.62	25×30
		1800	147	103	1.83	22×40
			147	103	1.81	30×25
		2200	121	84	2.09	22×45
			121	84	2.01	25×35
			121	84	2.1	30×30
			121	84	2.17	35×25
		2700	98	69	2.43	25×45
			98	69	2.43	30×35
		3300	80	56	2.76	25×50
			80	56	2.78	30×40
			80	56	2.71	35×30
		3900	68	48	3.12	30×45
			68	48	3.07	35×35
		4700	57	40	3.56	30×50
			57	40	3.5	35×40
		5600	47	33	3.87	35×45
		6800	39	27	4.19	35×50
100 2A	125	560	474	332	1.07	22×25
		820	324	227	1.35	22×30
			324	227	1.35	25×25
		1000	265	186	1.54	22×35
			265	186	1.56	25×30
		1200	221	155	1.74	22×40
			221	155	1.76	25×35
			221	155	1.71	30×25
		1500	177	124	1.99	22×45
			177	124	2.03	25×40
			177	124	2	30×30
			177	124	2.07	35×25
		1800	147	103	2.28	25×45
			147	103	2.27	30×35
		2200	121	84	2.57	25×50
			121	84	2.59	30×40
			121	84	2.52	35×30
		2700	98	69	2.94	30×45
			98	69	2.9	35×35
		3300	80	56	3.32	30×50
			80	56	3.31	35×40
		3900	68	48	3.69	35×45
		4700	57	40	4.14	35×50
160 2C	200	330	603	442	1.16	22×25
		390	510	357	1.43	22×30
		470	424	296	1.52	22×35
			424	296	1.55	25×25
		560	355	249	1.62	22×40
			355	249	1.73	25×30
		680	293	205	1.7	22×45
			293	205	1.81	25×35
			293	205	1.82	30×25
			243	170	1.81	22×50

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
160 2C	200	1000	199	139	2.04	25×45
			199	139	2.14	30×35
		1200	166	116	2.12	25×50
			166	116	2.22	30×40
			166	116	2.4	35×30
		1500	133	93	2.46	30×45
			133	93	2.53	35×35
		1800	111	77	2.98	35×45
		2200	91	63	3.1	35×50
180 2K	225	270	737	516	1.08	22×25
		330	603	422	1.3	22×30
		390	510	357	1.35	25×25
		470	424	296	1.5	22×35
			424	296	1.62	25×30
		560	355	249	1.62	22×40
			355	249	1.69	25×35
			355	249	1.67	30×25
		680	293	205	1.76	22×50
			293	205	1.72	25×40
			293	205	1.74	30×30
			293	205	1.92	35×25
		820	243	170	1.78	25×45
			243	170	1.85	30×35
		1000	199	139	1.91	25×50
			199	139	2.01	30×40
			199	139	2.16	35×30
		1200	166	116	2.19	30×45
			166	116	2.34	35×35
		1500	133	93	2.36	30×50
			133	93	2.56	35×40
		1800	111	77	2.67	35×45
200 2D	250	220	905	633	1.08	22×25
		270	737	516	1.20	22×30
		330	603	422	1.3	22×30
			603	422	1.35	25×25
		390	510	357	1.41	22×35
		470	424	296	1.5	22×40
			424	296	1.47	25×30
			424	296	1.56	30×25
		560	355	249	1.58	22×45
			355	249	1.65	25×35
		680	293	205	1.68	22×50
			293	205	1.8	25×40
			293	205	1.82	30×30
			293	205	1.96	35×25
		820	243	170	1.87	25×50
			243	170	1.99	30×35
			243	170	2.07	35×30
		1000	199	139	2.17	30×45

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
250 2E	300	180	1106	774	0.94	22×25
		220	905	633	1.1	22×30
			905	633	1.15	25×25
		270	737	516	1.13	22×35
		330	603	422	1.2	22×40
			603	422	1.3	25×30
			603	422	1.3	30×25
		390	510	357	1.26	22×45
			510	357	1.41	25×35
		470	424	296	1.37	22×50
			424	296	1.52	25×40
			424	296	1.36	30×30
			424	296	1.4	35×25
		560	355	249	1.59	25×45
			355	249	1.57	30×35
			355	249	1.56	35×30
		680	293	205	1.66	25×50
			293	205	1.76	30×40
		820	243	170	1.83	30×45
			243	170	1.82	35×35
		1000	199	139	1.87	30×50
			199	139	1.99	35×40
		1200	166	116	2.1	35×45
350 2V	400	68	2927	1610	0.56	22×25
		100	1990	1095	0.7	22×30
			1990	1095	0.7	25×25
		120	1659	912	0.73	22×35
		150	1327	730	0.79	22×40
			1327	730	0.82	25×30
			1327	730	0.82	30×25
		180	1106	608	0.81	22×45
			1106	608	0.89	25×35
			1106	608	0.9	30×30
		220	905	498	0.93	22×50
			905	498	0.97	25×40
			905	498	0.98	35×25
		270	737	406	1.01	25×50
			737	406	1.05	30×35
			737	406	1.01	35×30
		330	603	332	1.16	30×45
			603	332	1.16	35×35
		390	510	281	1.26	30×50
			510	281	1.26	35×40
		470	424	233	1.35	35×45
		560	355	196	1.51	35×50
400 2G	450	68	2927	1522	0.47	22×25
		82	2427	1262	0.56	22×30
			2427	1262	0.65	25×25
		100	1990	1035	0.60	22×30
		120	1659	863	0.64	22×35
			1659	863	0.7	25×30
			1659	863	0.78	30×25
		150	1327	690	0.7	22×40
			1327	690	0.73	25×35
		180	1106	575	0.78	22×50
			1106	575	0.82	25×40
			1106	575	0.83	30×30
			1106	575	0.86	35×25

GP series

Standard Size

Rated Voltage (V_{dc})	Surge Voltage (V_{dc})	Rated Capacitance (μF)	Max ESR 25℃ 120Hz (mΩ)	Type ESR 25℃ 120HZ (mΩ)	Rated ripple current 105℃ 120Hz (Arms)	Size ΦD×L (mm)
400 2G	450	270	737	383	0.94	25×50
			737	383	0.95	30×40
			737	383	0.91	35×30
		330	603	314	1.11	30×45
			603	314	1.13	35×35
		390	510	265	1.15	30×50
			510	265	1.26	35×40
		470	424	220	1.31	35×45
		560	355	185	1.5	35×50
		680	293	153	1.9	35×55
		820	242	126	2.2	35×60
			242	126	2.2	40×50
450 2W	500	56	4739	2370	0.47	22×25
		68	3903	1951	0.56	22×30
			3903	1951	0.65	25×25
		82	3237	1618	0.64	22×35
		100	2654	1327	0.7	22×40
			2654	1327	0.7	25×30
			2654	1327	0.78	30×25
		120	2212	1106	0.73	22×45
			2212	1106	0.73	25×35
		150	1769	885	0.78	22×50
			1769	885	0.82	25×40
			1769	885	0.83	30×30
			1769	885	0.86	35×25
		180	1474	737	0.87	25×45
			1474	737	0.86	30×35
		220	1206	603	0.94	25×50
			1206	603	0.95	30×40
			1206	603	0.91	35×30
		270	983	492	1.11	30×45
			983	492	1.13	35×35
		330	804	402	1.15	30×50
			804	402	1.26	35×40
		390	681	340	1.31	35×45
		470	565	282	1.5	35×50
		560	473	237	1.7	35×55
		680	391	196	2.0	35×60
			391	196	2.0	40×50
		820	324	162	2.2	35×65
			324	162	2.3	40×60
500 2H	550	39	6805	3403	0.35	22×30
		47	5647	2823	0.41	22×35
		56	4739	2370	0.47	22×40
		68	3903	1951	0.54	22×45
		82	3237	1618	0.62	25×40
		100	2654	1327	0.67	25×45
		120	2212	1106	0.77	25×50
			2212	1106	0.72	35×30

Custom designed capacitors available