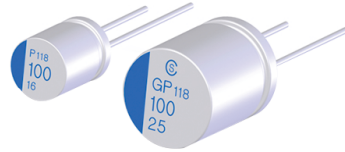




# GP Series

- Low ESR at a high frequency range
- High ripple current capability
- 2,000 hours at 105°C



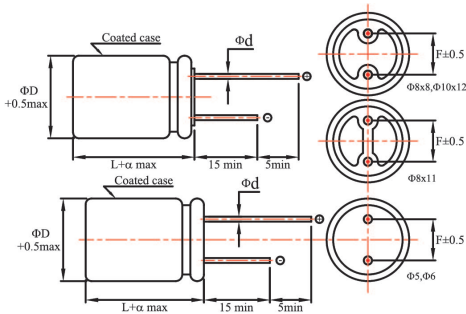
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	10 ~ 25Vdc								
Surge Voltage	Rated Voltage x1.15								
Capacitance Tolerance	M: ±20% (at 25°C and 120Hz)								
ESR	See the standard ratings table (at 25°C, 100~300KHz)								
Dissipation Factor (Tanδ)	See the standard ratings table (at 25°C, 120Hz)								
Leakage Current ※1	See the standard ratings table (Impress the rated voltage for 2 minutes)								
Low Temperature Characteristics Impedance Ratio	$Z(-25^{\circ}\text{C})/Z(+25^{\circ}\text{C}) \leq 1.15$ at 100KHz $Z(-55^{\circ}\text{C})/Z(+25^{\circ}\text{C}) \leq 1.25$ at 100KHz								
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	Capacitance change	≤ ±20% of the initial value	ESR	≤ 150% of the specified value	Dissipation factor(tanδ)	≤ 150% of the specified value	Leakage current	≤ specified value
Capacitance change	≤ ±20% of the initial value								
ESR	≤ 150% of the specified value								
Dissipation factor(tanδ)	≤ 150% of the specified value								
Leakage current	≤ specified value								
Damp Heat (Steady State)	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 1,000 hours at 60°C 90 to 95% RH <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	Capacitance change	≤ ±20% of the initial value	ESR	≤ 150% of the specified value	Dissipation factor(tanδ)	≤ 150% of the specified value	Leakage current	≤ specified value
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ESR	≤ 150% of the specified value								
Dissipation factor(tanδ)	≤ 150% of the specified value								
Leakage current	≤ specified value								

※1 In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

※2 ESR should be measured at both of the terminal ends closest to the capacitor body

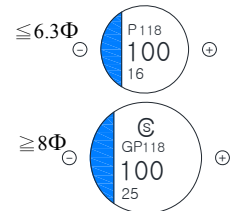
◆ DIMENSIONS (mm)



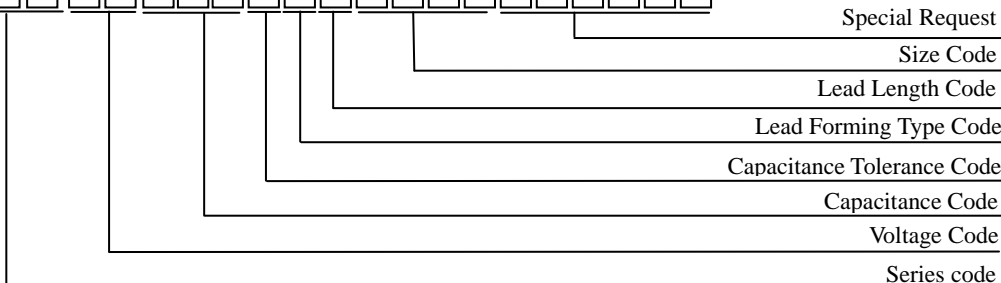
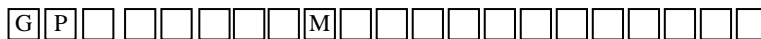
◆ Lead

ΦD	6.3	8	10	
Φd	0.6			
L	8	8	11	12
α	1	1	1.5	1.5
F	2.5	3.5	5.0	

◆ Marking



◆ PART NUMBER SYSTEM





## GP Series

◆ Standard Ratings

Rated Voltage (Vdc)	Rated Capacitance (μF)	Case Size ΦD×L (mm)	ESR 100~300KHz (mΩ max)	Rated Ripple Current 105°C,100KHz (mArms max)	Tan δ max	Leakage Current (μA max)	Part Number
10(1A)	470	8×8	20	3400	0.12	940	GP1A471MNN0808
	680	8×11	20	3900	0.12	1360	GP1A681MNN0811
	1000	10×12	19	6100	0.12	2000	GP1A102MNN1012
16(1C)	100	6.3×8	24	2490	0.12	320	GP1C101MNN6308
	180	8×8	19	3400	0.12	576	GP1C181MNN0808
	330	10×12	19	4500	0.12	1056	GP1C331MNN1012
	470	10×12	19	4500	0.12	1504	GP1C471MNN1012
25(1E)	47	8×11	30	2500	0.12	568	GP1E470MNN0811
	68	8×11	24	3320	0.12	425	GP1E680MNN0811
	100	10×12	20	4320	0.12	625	GP1E101MNN1012