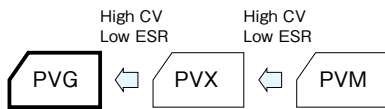


## Chip Type

- GREEN CAP
- SMD
- Low ESR
- 105°C 2000hours
- Anti-cleaning solvent

- Super low ESR and high ripple current are realized.
- Guaranteed 105°C, 2000 hours.



Marking color : Blue print

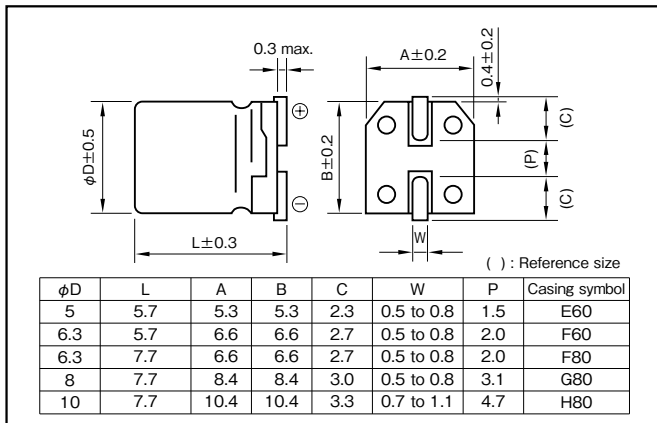
## Specifications

Item	Performance										
Category temperature range (°C)	-55 to +105										
Tolerance at rated capacitance (%)	±20 (20°C, 120Hz)										
Leakage current (μA) *Note	Less than 0.2CV (after 2 minutes) C : Rated capacitance (μF) , V : Rated voltage (V) (20°C)										
Tangent of the loss angle (tanδ)	Less than 0.12 (20°C, 120Hz)										
Characteristics at high and low temperature	<table border="1"> <thead> <tr> <th>Impedance ratio (max.)</th> <th>Z-25°C/Z+20°C</th> <th>1.15</th> </tr> </thead> <tbody> <tr> <td></td> <th>Z-55°C/Z+20°C</th> <td>1.25</td> </tr> </tbody> </table> <p>(100kHz)</p>	Impedance ratio (max.)	Z-25°C/Z+20°C	1.15		Z-55°C/Z+20°C	1.25				
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Endurance (105°C) (Applied ripple current)	<table border="1"> <thead> <tr> <th>Test time</th> <td>2000 hours</td> </tr> </thead> <tbody> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>150% or less of the initial specified value</td> </tr> <tr> <td>ESR change</td> <td>150% or less of the initial specified value</td> </tr> </tbody> </table>	Test time	2000 hours	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±20% of initial value	Tangent of the loss angle	150% or less of the initial specified value	ESR change	150% or less of the initial specified value
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ESR change	150% or less of the initial specified value										
Bias Humidity 60°C, 90 to 95%RH	<table border="1"> <thead> <tr> <th>Test time</th> <td>500 hours</td> </tr> </thead> <tbody> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>150% or less of the initial specified value</td> </tr> <tr> <td>ESR change</td> <td>150% or less of the initial specified value</td> </tr> </tbody> </table>	Test time	500 hours	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±20% of initial value	Tangent of the loss angle	150% or less of the initial specified value	ESR change	150% or less of the initial specified value
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Characteristics of applied surge voltage	<p>The capacitors shall be subject to 1000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor (Rc=1kΩ) in 6 minutes per cycle. Surge voltage : 1.15 times of rated voltage</p> <table border="1"> <thead> <tr> <th>Leakage current</th> <td>The initial specified value or less</td> </tr> </thead> <tbody> <tr> <td>Percentage of capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>150% or less of the initial specified value</td> </tr> <tr> <td>ESR change</td> <td>150% or less of the initial specified value</td> </tr> </tbody> </table>	Leakage current	The initial specified value or less	Percentage of capacitance change	Within ±20% of initial value	Tangent of the loss angle	150% or less of the initial specified value	ESR change	150% or less of the initial specified value		
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ESR change	150% or less of the initial specified value										
Failure rate	0.5% per 1000 hours maximum (Confidence level 60% at 105°C)										

\*Note : If any doubt arises, measure the leakage current after following voltage application treatment.  
Voltage application treatment : DC rated voltage are applied to the capacitors for 120 minutes at 105°C.

## Outline Drawing

Unit : mm



- Soldering conditions are described on page 15.
- Land pattern size are described on page 13.
- The taping specifications are described on page 16.

Part numbering system (example : 4V151M E60)					
PVG	4	V	151	M	E60
Series code	Rated voltage symbol	Rated capacitance symbol	Capacitance tolerance symbol	Casing symbol	Taping symbol

Standard Ratings

Rated voltage (V) Rated capacitance (μF)	Item	2.5			4			6.3		
		Case	ESR	Rated ripple current	Case	ESR	Rated ripple current	Case	ESR	Rated ripple current
		φD×L (mm)	(mΩ max.)	(mA rms)	φD×L (mm)	(mΩ max.)	(mA rms)	φD×L (mm)	(mΩ max.)	(mA rms)
120	—	—	—	—	—	—	5×5.7	8	4000	
150	—	—	—	5×5.7	8	4000	—	—	—	
220	5×5.7	8	4000	6.3×5.7	6	4500	6.3×5.7	7	4300	
270	—	—	—	6.3×5.7	6	4500	6.3×7.7	7	4600	
330	6.3×5.7	6	4500	6.3×7.7	6	4800	8×7.7	7	4700	
390	6.3×5.7	6	4500	6.3×7.7	6	4800	—	—	—	
470	6.3×7.7	6	4800	8×7.7	6	5000	8×7.7	7	4700	
560	6.3×7.7	6	4800	—	—	—	8×7.7	7	4700	
680	—	—	—	8×7.7	6	5000	—	—	—	
820	—	—	—	—	—	—	10×7.7	7	4900	
1000	8×7.7	6	5000	10×7.7	6	5200	—	—	—	
1200	10×7.7	6	5200	—	—	—	—	—	—	

(Note) Rated ripple current : 105°C, 100kHz ; ESR : 20°C, 100kHz

ALUMINUM

POLYMER HYBRID

105°C