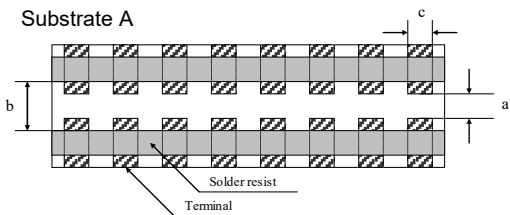


Performance and Test Methods

■ Performance and Test Methods

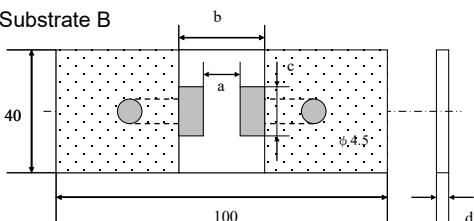
Characteristics		Performance	Test Methods and Conditions
Varistor Voltage		To meet the specified value.	The voltage between two terminals with direct current 1mA applied is called varistor voltage. The measurement shall be made as quickly as possible to avoid heat affection.
Maximum Allowable Voltage		To meet the specified value	Indicating maximum DC voltage or RMS of sine wave AC voltage which can be applied continuously
Maximum Clamping Voltage		To meet the specified value	The maximum voltage between two terminals with the specified standard shockwave current waveform (8/20 s) applied.
Maximum Energy		To meet the specified value	The maximum energy when the specified impulse energy current is applied 1 time without damage to the varistor.
Maximum Peak Current		To meet the specified value	The maximum current when a standard shock-wave current waveform(8/20s) is applied 1 time without damage to the varistor.
Capacitance		Reference value	Capacitance shall be measured with 1kHz10%, 1kHz 1Vrms.
Adhesion Strength of Termination		No peeling-off or exfoliation shall be manifest or recognizable in its incipient stages.	A sample is mounted on a test substrate B by reflow soldering, and the force of 5N (0.5 kgf) is applied to the center of the sides of the sample in the horizontal direction of the substrate for 10 1 seconds.
Resistance to Flexure of Substrate	Visual	No mechanical damage.	A sample is mounted on a test substrate B by reflow soldering, and the center of the substrate is pressurized as the sample side down and bent $1^{+0.2mm}_{-0mm}$ for 5±1 seconds.
	Varistor Voltage	$\Delta V1mA \leq \pm 10\%$	
Vibration Resistance		No remarkable visible damage No peeling-off or exfoliation and no failure	A sample is mounted on a test substrate B by reflow soldering. Vibration Frequency : 10~55Hz Full Amplitude : 1.5mm, 10~55 ~10Hz 1min. XYZ direction 2hrs for each total 6hrs.
Solderability		75% of immersed terminal electrodes are covered by new solders	Soldering Temperature : 230±5°C Immersion Time : 2±1sec. Type of Solder : H60A or H63A Flux : Ethanol solution of rosin (25%)
Resistance to Soldering Heat	Visual	No mechanical damage The loss of electrode due to solder dipping shall not exceed 25% of the electrode edge.	Preheating : 140~160°C, 1~2min. Soldering Temperature : 260±5°C Immersion Time : 50±0.5sec. Type of Solder : H60A or H63A Continuous immersion after preheating
	Varistor Voltage	$\Delta V1mA \leq \pm 10\%$	
Temp. Cycling	Visual	No mechanical damage Leaving	Step 1~2 below in order completes 1 cycle. The cycle is repeated 50 times. -40±3°C, 30 min. +85±2°C, 30 min.
	Varistor Voltage	$\Delta V1mA \leq \pm 10\%$	
Humidity Load test		$\Delta V1mA \leq \pm 10\%$	Test temperature : 60°C Relative Humidity : 90~95%RH Duration : 1,000 hours Maximum allowable voltage is applied continuously under these conditions.
Life Test at High Temperature Load		$\Delta V1mA \leq \pm 10\%$	Test Temperature : 125±2°C Duration : 1,000 hours Maximum allowable voltage is applied continuously under these conditions.

Substrate A



Unit: mm

Substrate B



Style		Substrate A			Substrate B			
Size	L × W	a	b	c	a	b	c	d
10	1.6 × 0.8	0.8	3.0	1.0	0.8	3.0	1.0	1.6
20	2.0 × 1.25	1.2	3.6	1.2	1.2	3.6	1.2	
30	3.2 × 1.6	2.2	5.0	2.0	2.2	5.0	2.0	
40	3.2 × 2.5			2.9			2.9	
70	4.5 × 3.2	3.5	7.0	3.7	3.5	7.0	3.7	
80	5.7 × 5.0	4.5	8.0	5.6	4.5	8.0	5.6	

Substrate Material : Glass epoxy