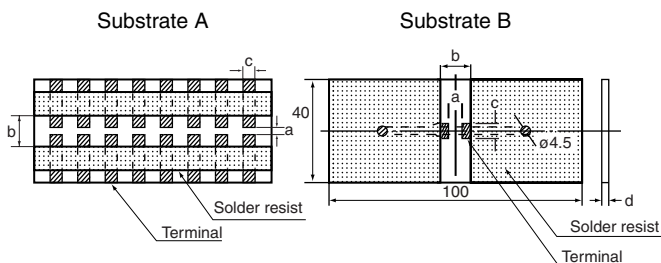


PERFORMANCE AND TEST METHOD

CHIP VARISTORS

Characteristics		Specifications	Test Method and Conditions															
Standard Test Condition			20±5°C, 65±20% RH in principle. If results obtained are doubted, a further test should be carried out at 20±15°C, 65±20% RH.															
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 fast as possible to avoid heat affection.															
Maximum allowable Voltage			The maximum voltage that can be applied continuously indicating maximum DC voltage and RMS value of 50-60 Hz AC.															
Short-time applied voltage (Applicable to CVA Series)			The maximum value of DC voltage that can be applied for a short period of time. (5 minutes)															
Maximum Clamping Voltage			The maximum voltage between two terminals with the specified standard shock-wave current waveform (8/20 μs) applied.															
Maximum energy			The maximum energy when the specified impulse energy current is applied 1 time without damage to the varistor.															
Maximum peak current			The maximum current when a standard shock-wave current waveform (8/20 μs) is applied 1 time without damage to the varistor.															
Capacitance		Reference value	Capacitance shall be measured with 1kHz±10%, 1kHz 1Vrms.															
Adhesion strength of termination		No peeling-off or exfoliation shall be manifest or recognizable in its incipient stages.	A specimen 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 specimen is mounted on a test substrate B by reflow soldering, and the center of the substrate is pressurized as the specimen side down and bent 1+0.2mm, -0mm for 5±1 seconds.															
	Varistor voltage	$\Delta V_{1mA} \leq \pm 10\%$																
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% coverage minimum	Soldering temperature : 235±5°C Immersion time : 2±0.5sec. 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 : 150±10°C, 1-2min. Soldering temperature : 260±5°C Immersion time : 5±0.5sec. Type of solder : H60A or H63A Flux : Ethanol solution of rosin (25%)															
	Varistor voltage	$\Delta V_{1mA} \leq \pm 10\%$																
Temperature cycling	Visual	No mechanical damage	<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3°C</td> <td>30min.</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>5min.</td> </tr> <tr> <td>3</td> <td>+85±2°C</td> <td>30min.</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>5min.</td> </tr> </tbody> </table> Leaving a specimen under the temperature of step 1-4 above in order completes 1 cycle. After being left at room temperature for 24±2 hours, the specimen is visually examined and measured varistor voltage.	Step	Temperature	Time	1	-40±3°C	30min.	2	Room temp.	5min.	3	+85±2°C	30min.	4	Room temp.	5min.
	Step	Temperature		Time														
1	-40±3°C	30min.																
2	Room temp.	5min.																
3	+85±2°C	30min.																
4	Room temp.	5min.																
Varistor voltage	$\Delta V_{1mA} \leq \pm 10\%$																	
Humidity load test		$\Delta V_{1mA} \leq \pm 10\%$	Test temperature : 60±2°C (CVH series 40±2°C) Relative Humidity : 90-95% Duration : 1,000±12 hours Applied Voltage. Maximum allowable Voltage is applied continuously.															
Life test at high temperature load		$\Delta V_{1mA} \leq \pm 10\%$	Test temperature : 125±2°C (CVH series 85±2°C) Duration : 1,000±12 hours Applied Voltage. Maximum allowable Voltage is applied continuously.															



Unit : mm

Parts dimension	Substrate A	Substrate B						
		a	b	c	d			
05	1.0×0.5	0.5	2.4	0.6	0.5	2.4	0.6	1.6
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	1.6
30	3.2×1.6	2.2	5.0	2.0	2.2	5.0	2.0	1.6
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	1.6
80	5.7×5.0	4.5	8.0	5.6	4.5	8.0	5.6	
90	7.5×6.3	5.0	10.8	7.0	5.0	10.8	7.0	

Substrate material : Glass epoxy