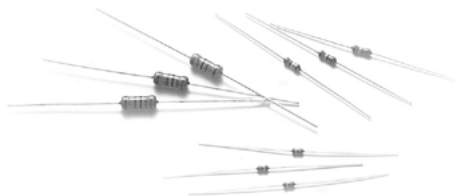


Metal Glazed Film Resistors

High Voltage & High Ohmic Type

Normal & Miniature Style [HHV Series]



INTRODUCTION

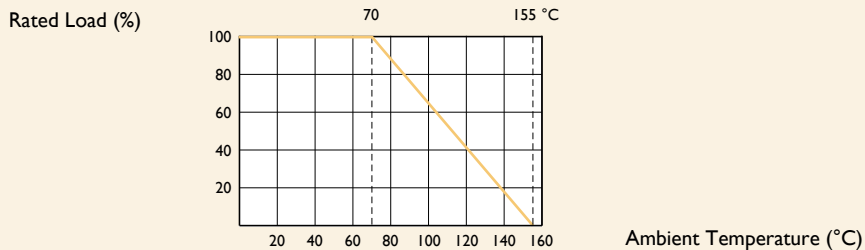
The HHV Series High Voltage & High Ohmic Resistors are made of metal glaze film, with tinned connecting leads of electrolytic copper welded to the end-caps. The resistors are coated with layers of pink color lacquer.

FEATURES

Power Rating	1/4W, 1/2W, 1W, 2W, 3W
Resistance Tolerance	$\pm 1\%$, $\pm 5\%$
T.C.R.	$\pm 200\text{ppm}/^\circ\text{C}$
Flameproof Multi-layer Coating Meets	UL-94V-0
Flameproof Feature Meets Overload Test	UL-1412

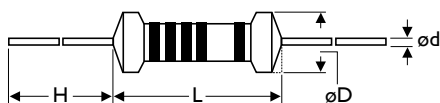
DERATING CURVE

For resistors operated in ambient temperatures above 70°C , power rating must be derated in accordance with the curve below.



DIMENSIONS

Unit: mm



5th color code: yellow

STYLE		DIMENSION			
Normal	Miniature	L	ϕD	H	ϕd
HHV-25	HHV50S	6.3 ± 0.5	2.4 ± 0.2	28 ± 2.0	0.55 ± 0.05
HHV-50	HHV1SS	9.0 ± 0.5	3.3 ± 0.3	26 ± 2.0	0.55 ± 0.05
HHV1WS	HHV2SS	11.5 ± 1.0	4.5 ± 0.5	35 ± 2.0	0.8 ± 0.05
HHV2WS	HHV3SS	15.5 ± 1.0	5.0 ± 0.5	33 ± 2.0	0.8 ± 0.05

Note:

ELECTRICAL CHARACTERISTICS

STYLE	HHV-25	HHV50S	HHV-50	HHVISS	HHVIWS	HHV2SS	HHV2WS	HHV3SS
Power Rating at 70°C	1/4W	1/2W		1W		2W		3W
Maximum Working Voltage (DC)	1,600V		3,500V		5,000V		7,000V	
Maximum Overload Voltage (DC)	3,000V		7,000V		10,000V		14,000V	
Voltage Proof on Insulation	300V		500V		700V			
Resistance Range	100K Ω - 68M Ω for E24 & E96 series value							
Operating Temp. Range	-55°C to +155°C							
Temperature Coefficient	$\pm 200\text{pm}/^\circ\text{C}$							

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV for 5 Sec.	$\pm 2.0\% + 0.05\Omega$
Voltage Proof on Insulation	IEC 60115-1 4.7	in V-block for 60 Sec., test voltage by type	By type
Temperature Coefficient	IEC 60115-1 4.8	-55°C to +155°C	By type
Insulation Resistance	IEC 60115-1 4.6	in V-block for 60 Sec.	$> 10,000\text{M}\Omega$
Solderability	IEC 60115-1 4.17	235 $\pm 5^\circ\text{C}$ for 3 ± 0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5 ± 0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	$\geq 2.5\text{kg}$ (24.5N)
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec. off)	$\pm 1.0\% + 0.05\Omega$
Damp Heat Steady State	IEC 60115-1 4.24	40 $\pm 2^\circ\text{C}$, 90-95% RH for 56 days, loaded with 0.1 times RCWV	$\pm 5.0\% + 0.05\Omega$
Endurance at 70°C	IEC 60115-1 4.25	70 $\pm 2^\circ\text{C}$ at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	$\pm 5.0\% + 0.05\Omega$
Temperature Cycling	IEC 60115-1 4.19	-55°C $\Rightarrow$ Room Temp. $\Rightarrow$ +155°C $\Rightarrow$ Room Temp. (5 cycles)	$\pm 1.0\% + 0.05\Omega$
Resistance to Soldering Heat	IEC 60115-1 4.18	260 $\pm 3^\circ\text{C}$ for 10 ± 1 Sec., immersed to a point 3 $\pm 0.5\text{mm}$ from the body	$\pm 1.0\% + 0.05\Omega$
Accidental Overload Test	IEC 60115-1 4.26	4 times RCWV for 1 Min.	No evidence of flaming or arcing

Note: RCWV(Rated Continuous Working Voltage) = $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$ or Max. working voltage listed above, whichever less.

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