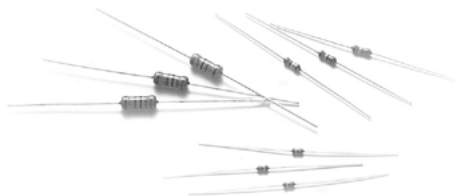


Metal Glazed Film Resistors

High Voltage & High Ohmic Type

Normal & Miniature Style [HHV Series]



INTRODUCTION

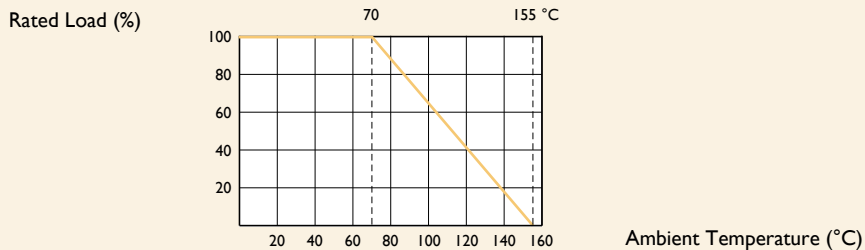
The HHV Series High Voltage & High Ohmic Resistors are made of metal glaze film, with tinned connecting leads of electrolytic copper welded to the end-caps. The resistors are coated with layers of pink color lacquer.

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

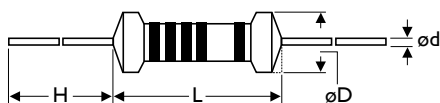
DERATING CURVE

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.

Revision: 201304



EXPLANATIONS OF ORDERING CODE

MFR	-12	F	T	F	52-	100R
Code 1 - 3 Series Name See Index	Code 4 - 6 Power Rating -05 = $\varnothing$ d0.5mm -06 = $\varnothing$ d0.6mm -07 = $\varnothing$ d0.7mm -08 = $\varnothing$ d0.8mm -10 = $\varnothing$ d1.0mm -14 = $\varnothing$ d1.4mm -12 = 1/6W -25 = 1/4W 25S = 1/4WS -50 = 1/2W 50S = 1/2WS 100 = 1W 1WS = 1WS 200 = 2W 2WS = 2WS 204 = 0.4W 207 = 0.6W 300 = 3W 3WS = 3WS 3WM = 3WM 400 = 4W 500 = 5W 5WS = 5WS 5SS = 5WSS 700 = 7W 7WS = 7WS 10A = 10W 20A = 20W 30A = 30W 40A = 40W 50A = 50W 10S = 10WS 15A = 15W 25A = 25W 10B = 100W 25B = 250W	Code 7 Tolerance P = $\pm 0.02\%$ A = $\pm 0.05\%$ B = $\pm 0.1\%$ C = $\pm 0.25\%$ D = $\pm 0.5\%$ F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$ - = Base on Spec.	Code 8 Packing Style T = Tape/Box R = Tape/Reel B = Bulk	Code 9 Temperature Coefficient of Resistance - = Base on Spec. A = ± 5 ppm/ $^{\circ}$ C B = ± 10 ppm/ $^{\circ}$ C C = ± 15 ppm/ $^{\circ}$ C S = ± 20 ppm/ $^{\circ}$ C D = ± 25 ppm/ $^{\circ}$ C E = ± 50 ppm/ $^{\circ}$ C F = ± 100 ppm/ $^{\circ}$ C G = ± 200 ppm/ $^{\circ}$ C H = ± 250 ppm/ $^{\circ}$ C I = ± 300 ppm/ $^{\circ}$ C J = ± 350 ppm/ $^{\circ}$ C	Code 10 - 12 Forming Type 26- = 26mm 52- = 52.4mm 73- = 73mm 81- = 81mm 91- = 91mm F = F Type FK = FK Type FKK = FKK Type FFK = F-form Kink M = M-Type Forming MB = M-form W/flat MT = MT Type Forming MR = MR Type AV = AVIsert PN = PANAsert	Code 13 - 17 Resistance Value 0R1 = 0.1 100R = 100 10K = 10,000 10M = 10,000,000

EXCEPTION:

• Cement series:

<Code 8>: Special packing style code

B: Bulk with wirewound or metal oxide sub-assembly for resistance value

W: Bulk with ceramic based wirewound sub-assembly for resistance value

M: Bulk with metal oxide sub-assembly for resistance value

F: Bulk with Fiberglass based wirewound sub-assembly for resistance value

<Code 10-12>: Without forming code

Example: **SQP500JB-10R**

• JPW series:

<Code 13-17>: without resistance value code

Example: **JPW-06-T-52-**

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Yageo:

[HHV100FT-73-100K](#) [HHV-25JR-52-1M](#) [HHV-50FR-52-22M](#) [HHV1WSJT-73-2M](#) [HHV1WSJT-73-100K](#) [HHV-25JR-52-10M](#) [HHV-25FR-52-3M9](#) [HHV-50JT-52-47M](#) [HHV-25JT-52-15M](#) [HHV-25FR-52-1M8](#) [HHV-25JT-52-680K](#) [HHV-50FR-52-10M](#) [HHV-25FR-52-330K](#) [HHV-25JR-52-12M](#) [HHV-50FR-52-33M](#) [HHV-50JT-52-33M](#) [HHV-25JT-52-1M](#) [HHV-25JT-52-20K](#) [HHV-25FR-52-2M7](#) [HHV-25FR-52-220K](#) [HHV-25FR-52-1M2](#) [HHV-50JT-52-100K](#) [HHV-50FR-52-470K](#) [HHV-25FR-52-2M2](#) [HHV-25JR-52-22K](#) [HHV-25JT-52-22M](#) [HHV-25JR-52-2M7](#) [HHV-50FT-52-1M](#) [HHV-50JT-52-10M](#) [HHV-25JR-52-1M8](#) [HHV-25JR-52-100K](#) [HHV-50JR-52-4M7](#) [HHV-50FT-52-100K](#) [HHV-25JT-52-4M7](#) [HHV-50JT-52-1M](#) [HHV-50JT-52-22M](#) [HHV-25FT-52-1M2](#) [HHV-50FT-52-3M3](#) [HHV-50JT-52-4M7](#) [HHV-50FR-52-3M9](#) [HHV-50JT-52-470K](#) [HHV-50JR-52-1M](#) [HHV-50JR-52-200K](#) [HHV-50FR-52-1M](#) [HHV-50JT-52-5M6](#) [HHV-25FR-52-10M](#) [HHV1WSJR-73-8M2](#) [HHV-50FR-52-2M2](#) [HHV-50FR-52-24M](#) [HHV-50FR-52-560K](#) [HHV-25FR-52-200K](#) [HHV-50FR-52-180K](#) [HHV-50FR-52-100K](#) [HHV-50FR-52-750K](#) [HHV-25JR-52-1M5](#) [HHV-50FR-52-162K](#) [HHV-25JR-52-1M2](#) [HHV-50FR-52-330K](#) [HHV-25JR-52-8M2](#)