HVA Ceramic Resistors For Anti Pulse And Surge

Catalogue

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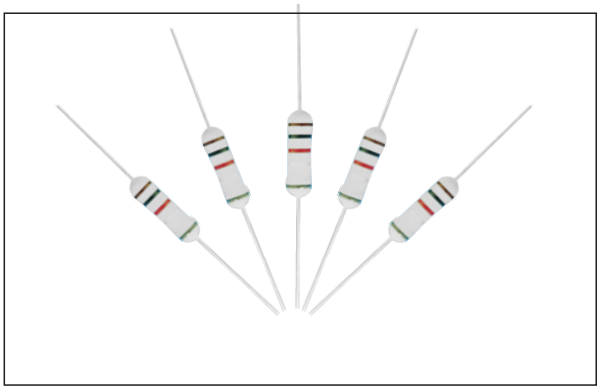


Introduction

Ⅰ HVA’s Resistor series are for high voltage,high energy and high current products.

Ⅱ HVA’s function is much better than carbon composition resistor, in some fileds, several carbon composition resistors can be replaced by only one ceramic resistor.

Ⅲ Operating ambient temperature:-55℃~200℃.

Ⅳ Resistance value:3Ω~2MΩ.

Ⅴ Tolerance:K(±10%),M(±20%) are recommended,

Ⅵ For customerized products please contact with us.

Features

Ⅰ Special ceramic resistor , was made of Clay , Silicon dioxide and Porcelain cement ,After sintering under high temperature and high voltage , the resistor core was build ,then take the insulation coating.

Ⅱ Saver than the wire-wound resistor and film resistor , which will avoid the wire disconnecting and the film breaking up .

Ⅲ High peak power can be reached at 5KW-30KW in short time.

Ⅳ Good performance in bearing high voltage and high current.

Ⅴ Products meet the RoHS requirments.

Applications

Ⅰ Radar,Motor Drives, Broadcast Transmitters.

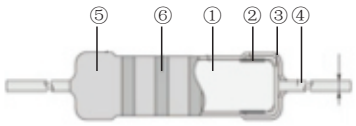
Ⅱ X-Ray equipment ,Lasers,Medical Defibrillators.

Ⅲ Dynamic Braking, Soft-start/Current-limit equipment.

Ⅳ Snubber Circuits, Dummy Loads, Energy Research field..

Ⅴ RF Amplifiers,Semiconductor Process,Power Conditioning.

Construction



①	Resistive body	④	Lead wire
②	Inner electrode	⑤	Coating
③	Electrode cap	⑥	Marking

Ordering Information

Example:

HVA	01B	R100	K
(1)	(2)	(3)	(4)
Series Name	Power Rating	Resistance	Resistance Tolerance

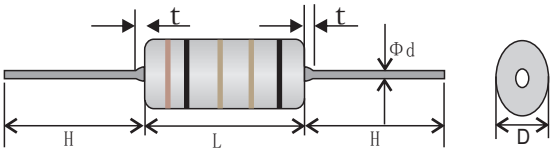
(1)Type: HVA SERIES

(2)Power Rating: 012=1/2W,01B=1W,02B=2W

(3)Resistance Value:R100=0.1R、1R00=1Ω、10R0=10Ω、100R0=100Ω

(4)Tolerance:K=±10%,M=±20%

Dimensions



Type	Power	Dimensions(mm)				
		L±1.0	D±1.0	d±0.5	H±3	t Max
HVA 012	0.5W	9.0	3.5	0.70	26	1.5
HVA 012A	0.5W	11.0	4.0	0.70	30	1.5
HVA 075A	0.75W	12.0	4.5	0.70	30	1.5
HVA01B	1.0W	16.0	4.5	0.70	30	1.5
HVA01C	1.0W	16.0	5.0	0.70	30	1.5
HVA02A	2.0WS	16.0	5.0	0.70	30	1.5
HVA02B	2.0W	19.0	5.5	0.78	38	1.5
HVA02C	2.0W	19.0	6.0	0.78	38	1.5
HVA03B	3.0W	22.0	6.0	0.78	38	1.5

*For resistors operated at an ambient temperature of 70℃ or above,the power rating should be derated in accordance with the above derating curve.

Power And Resistance Etc

Type	Power (W)	Resistance Range (Ω)	T C R	Max.Working Voltage	Max.overload Voltage	Max.Pulse Voltage	Insulation Voltage
HVA 012	0.5W	3.3Ω~1M	-800±300 :R<100Ω -1200±300 :R≥100Ω	500V	1000V	10KV	500V
HVA 012A	0.5W			500V	1000V	10KV	
HVA 075A	0.75W			1000V	1500V	12KV	
HVA01B	1.0W			2000V	2500V	14KV	
HVA01C	1.0W			2000V	2500V	14KV	
HVA02A	2.0WS			4000V	5000V	20KV	700V
HVA02B	2.0W			4000V	5000V	20KV	
HVA02C	2.0W			4000V	5000V	20KV	900V
HVA03B	3.0W			5000V	6000V	20KV	900V

Remark:

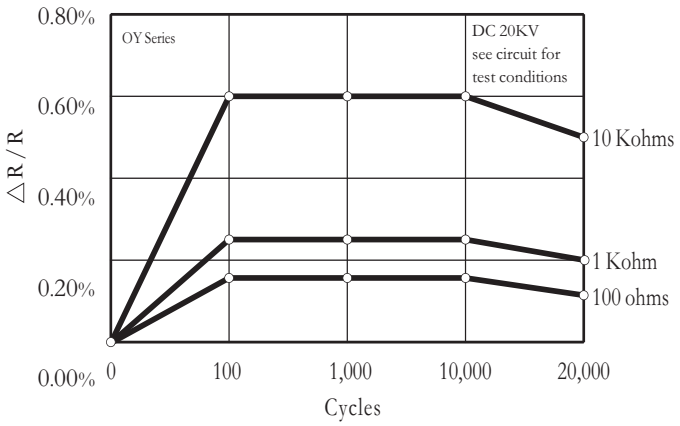
Ⅰ Rating Ambient Temperature:+70℃

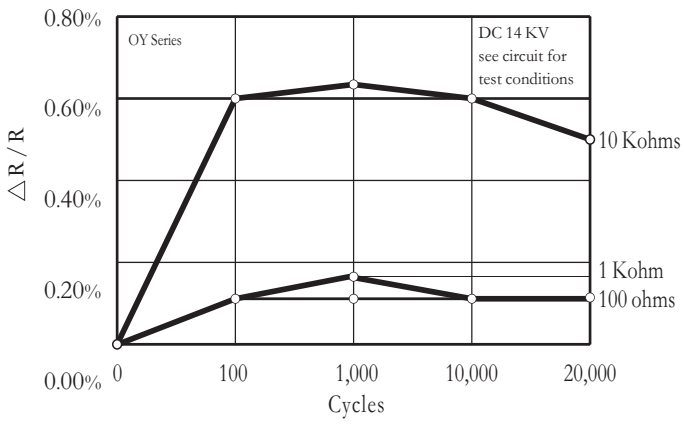
Ⅱ Operating temperature range:-40℃ ~+200℃

Ⅲ For the Max.working voltage, according to the calculated the value for the $\sqrt{\text{rated power} * \text{rated resistance}}$ or Max.working voltage in the form, it will get the lower.

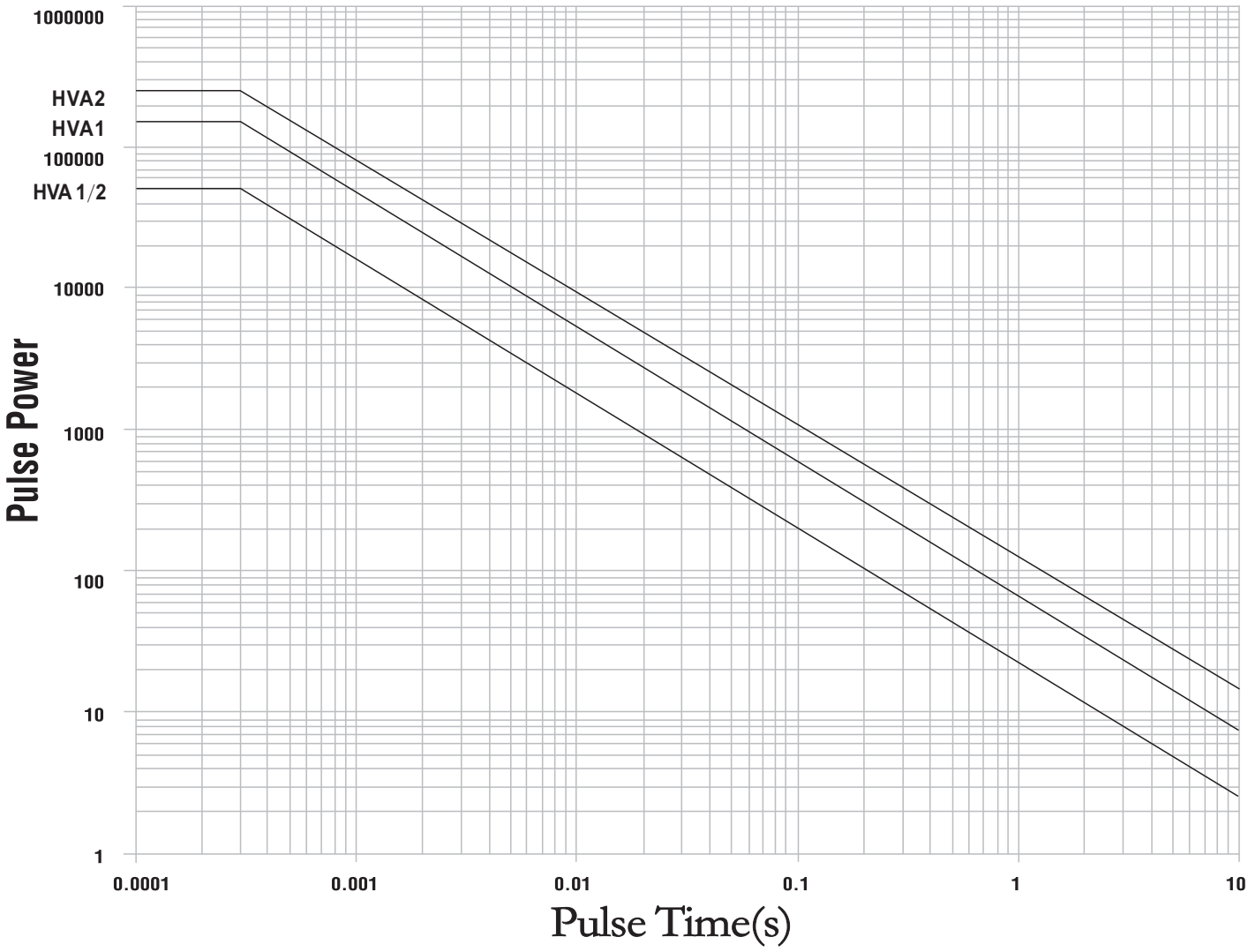
Ⅳ For the Max.overload voltage, according to the calculated 2.5 times rated voltage or Max.overload voltage , it will get the lower value.

Resistance to Pulse

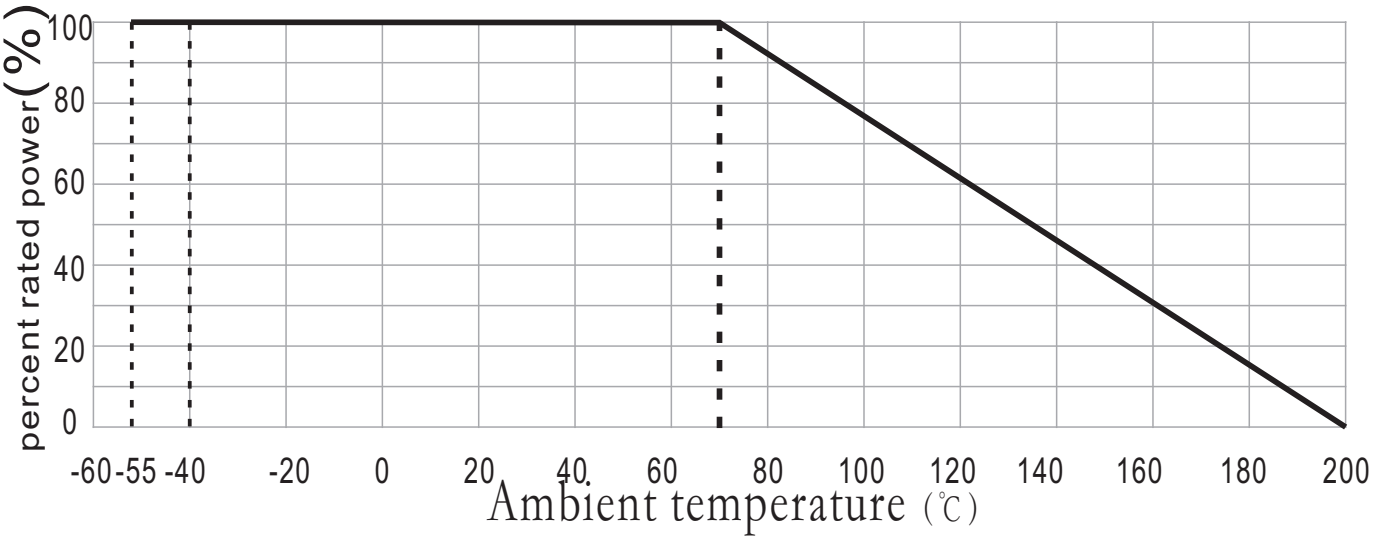




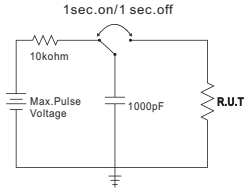
Pulse Limiting Power(Po) One Pulse



Derating Curve



Performance (Reference Standards:IEC60115-1 and JIS C5201-1)

Test Items	Peformance Requirements △R ± (%+0.05Ω)		Test Methods	
	Limit	Typical		
Resistance	Within specified tolerance	1kΩ,2kΩ 3kΩ,5kΩ ……	25℃	
			Resistance	Measuring voltage
			3.3Ω-8.2Ω	0.3V
			10Ω-82Ω	1.0V
			100Ω-390KΩ	3.0V
T.C.R	-800 ± 300*10^{-6}/K:R < 100Ω -1200 ± 300*10^{-6} K:R ⩾ 100Ω	～	+25℃/-40℃ , +25℃/+75℃ 和+25℃/+125℃	
Voltage Coefficient (Apply for 1KΩ or above)	0～-0.20%/V	～	Rated voltage and rated voltage*10%	
Overload(Short time)	⩽ △R ± (2%R+0.05Ω)	0.4	Rated voltage *2.5or Max.over vol.which is lower for 5s	
Resistance to pulse	⩽ △R ± (5%R+0.05Ω)	～	The resistor mounted on to the test circuit as below is applied with high voltage impulse 10000 cycles  14KV and 20KV values used in circuit as shown; full voltage not applied directly to resistor.	
Resistance to soldering heat	⩽ △R ± (2%R+0.05Ω)	0.8	350℃ ± 10℃ 、 3.5S ± 0.5S	
Rapid change of temperature	⩽ △R ± (2%R+0.05Ω)	0.4	-40℃ (30min) /+85℃ (30min) 5 cycles	
Moisture resistance	⩽ △R ± (5%R+0.05Ω)	0.6	40℃ ± 2℃ 90%-95%RH,1000h 1.5hON\0.5hOFF cycles	
Load life	⩽ △R ± (5%R+0.05Ω)	0.4	70℃ ± 2℃,1000h 1.5hON\0.5hOFF cycles	
Resistance to solvent	No abnormality in appearance marking shall be easily legible	～	Dipping in IPA or Xylene for 3 min.and leaving for 10min. after removing drops,then brushing 10 times.	

When testing the resistance value ,the ambient temperature should keep at 25℃ ± 2℃ and the moisture keep at 65%