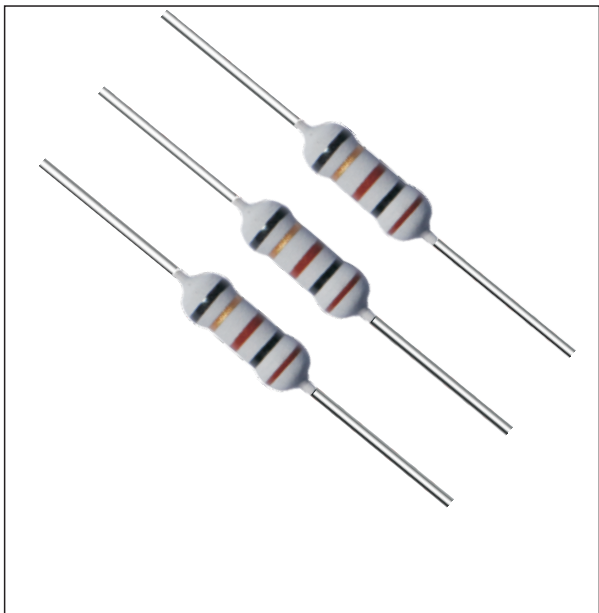


## HVB Ceramic Resistors For Anti Pulse And Surge

# Catalogue

- Introduction
- Features
- Applications
- Construction
- Dimensions
- Derating Curve
- Power And Resistance etc
- Pulse Limiting Power( $P_o$ )One Pulse
- Ordering Information
- Performance



## Introduction

- I HVB 's Resistor series are for high volt age,power charging/ discharging circuits,surge energy applications and conform to RoHS directive and lead-free.
- II For customed designs,tighter tolerances,nonstandard technical requirements,or custom special applications,please contact our sales for more information.
- III The HVB is perfect for medical defibrillators.
- IV Surface insulation optional palm red or green.
- V Compared with HVA,the HVB offers more choices for customer.

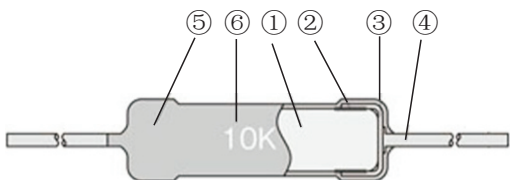
## Features

- 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

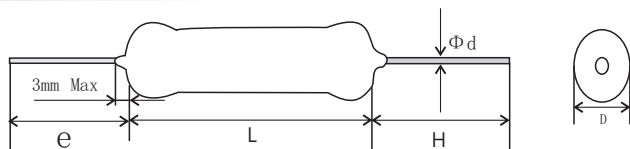
- I Radar,Motor Drives,Broadcast Transmitters,
- II X-Ray,Lasers,Medical Defibrillators.
- III Dynamic Braking,Soft-start/Current-limit.
- IV Snubber Circuits,Dummy Loads,Energy Research.
- V RF Amplifiers,Semiconductor Process,Power Conditioning .

## Construction



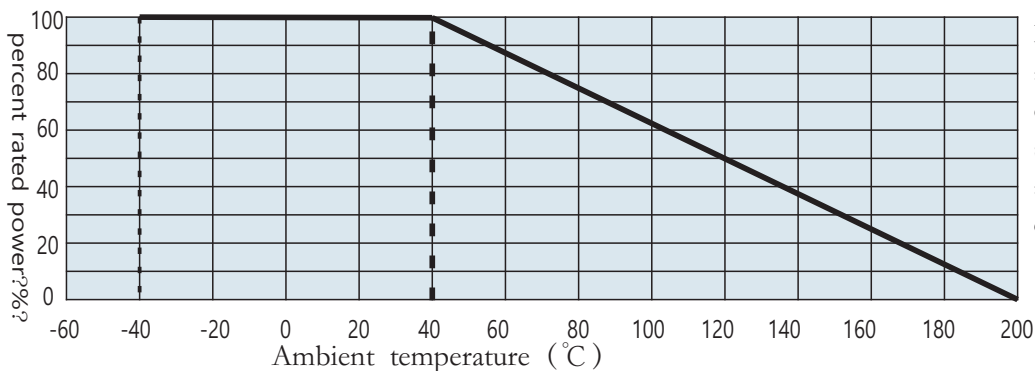
①	Resistive body	④	Lead wire
②	Inner electrode	⑤	Coating
③	Electrode cap	⑥	Marking

## Dimensions



Type	Dimensions(mm)				Weight(g) (1000pcs)
	L ± 1.0	D ± 1.0	d	H ± 3	
HVB1/2	11	3.5	0.8	38.0	700 ± 10
HVB1	16	4.5			1250 ± 10
HVB1.5	19	5.0			1450 ± 10
HVB2	21	5.0			1800 ± 20
HVB3	26	5.0			2800 ± 30
HVB4	38	7.0	1.0		6000 ± 30
HVB5	44	7.5			8000 ± 50

## Derating Curve



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

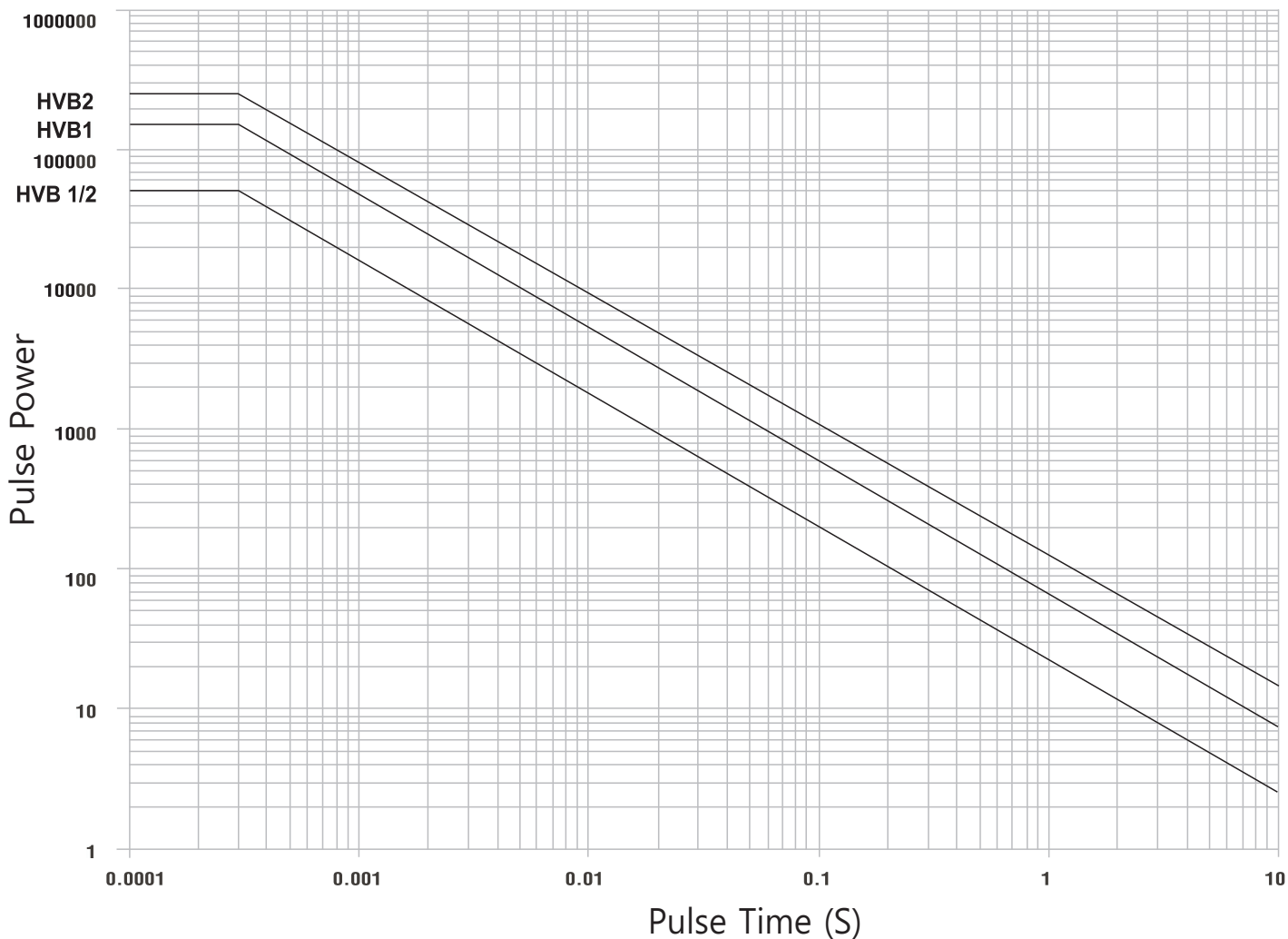
## Power And Resistance etc

Type	Power rating @40°C	Resistance range(Ω)		T.C.R (× 10 <sup>-6</sup> /K)	Max. Working	Max. overload voltage	Max. pulse voltage	Rated Ambient Temperature	Operating temp Range
		K: ± 10% E12	M: ± 20% E6						
HVB1/2	0.5W	10-390K	3.3-330K	-900 ± 300 :R < 100Ω -1200 ± 300 :R ≥ 100Ω	200V	400V	10KV	+40°C	-40°C - 200°C
HVB1	1W				300V	600V	15KV		
HVB1.5	1.5W				400V	800V	25KV		
HVB2	2W				450V	900V	25KV		
HVB3	3W				500V	1000V	25KV		
HVB4	4W				550V	1100V	25KV		
HVB5	5W				600V	1200V	30KV		

### Remark:

- I Rated Ambient Temperature: +70°C .
- II Operating temperature range: -40°C ~ +200°C .
- III Rated voltage =  $\sqrt{\text{power rating} \times \text{resistance value}}$  or Max. working voltage, whichever is lower.
- IV The maximum pulse voltage in the "resistance to pulse" examination condition of the performance column.

## Pulse Limiting Power(Po)One Pulse

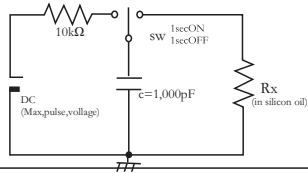


## Ordering Information

Example

HVB	1	C	T631	R	103	K
Product code	Power rating	Terminal Surface Material	Taping	Packing	Nominal Resistance	Resistance Tolerance
	1 /2: 0.5W 1 : 1.0W 1.5 : 1.5W 2 : 2.0W 3 : 3.0W 5 : 5.0W	C:SnCu			3 digits	K: ± 10% M: ± 20%

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

Test Items	Performance Requirements $\Delta R \pm (\% + 0.05\Omega)$		Test Methods	
	Limit	Typical		
Resistance	Within specified tolerance	—	25°C	
			Resistance	Measuring voltage
			3.3Ω-8.2Ω	0.3V
			10Ω-82Ω	1.0V
			100Ω-390KΩ	3.0V
T.C.R	-900 ± 300°C *10 /K (R < 100Ω) -1200 ± 300°C *10 /K (R ≥ 100Ω)	—	+25°C / -40°C , and +25°C / +125°C	
Voltage Coefficient (Apply for 1KΩ or over)	0 ~ -0.20%/V (HVB1/2) 0 ~ -0.10%/V (HVB1) 0 ~ -0.05%/V (HVB2,3,4,5)	—	Rated voltage and rated voltage*10%	
overload(short time)	≤ ΔR ± (2%+0.05Ω)	0.4	Rated voltage*2.5 or Max.overload vol. whichever is lower for 5s	
Resistance to pulse	≤ ΔR ± (5%+0.05Ω)	—	The resistor mounted on to the test circuit as below is applied with high voltage impulse 10,000 cycles. 	
Resistance to soldering heat	≤ ΔR ± (2%+0.05Ω)	0.8	350°C ± 10°C、3.5S ± 0.5S	
Rapid change of temperature	≤ ΔR ± (2%+0.05Ω)	0.4	-40°C (30min) / +85°C (30min) 5 cycles	
Moisture resistance	≤ ΔR ± (5%+0.05Ω)	0.6	40°C ± 2°C .90%-95%RH,1000h 1.5h ON\0.5h OFF cycles	
Load life	≤ ΔR ± (5%+0.05Ω)	0.4	40°C ± 2°C ,1000h 1.5h ON\0.5h OFF cycles	
High temperature exposure	≤ ΔR ± (5%+0.05Ω)	1.7	+200°C, 1000h	
Resistance to solvent	No abnormality in appearance. Marking shall be easily legible	—	Dipping in IPA or Xylene for 3 min. and leaving for 10 min. after removing drops,then brushing 10 times.	

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