

Cylindrical High Voltage ,Low TCR & VCR Resistors,  
Thick film,Non-Inductive

VOICE : +82-31-429-6379  
FAX : +82-31-429-9127  
E-MAIL : info@3RLab.com  
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## High Voltage Non-Inductive Resistors for HV Dividers, Precision HV circuits

3RLAB offers HS - series to meet applications very Low TCR , Low VCR requirements , Especially for High Voltage - Functional Non-Inductive Divider Sets, High Voltage Precision Measurements Systems .

## HS Precision High Voltage Resistor, Non-Inductive Thick Film

Epoxy conformal full coat for excellent humidity protection  
Resistance tolerance offered : 0.5% 1% 2% 5%  
(0.1% special upto 100Megohm of HS15 HS19 HS25)

- \* Temperature Coefficient of Resistance: 75ppm/°C std.  
and (20ppm/°C 35ppm/°C 50ppm/°C 60ppm/°C 85ppm/°C as special)
- \* Load Life Stability of 0.25% per 1000hours at rated power.
- \* Resistance range : 100kΩ to 1GΩ, and extended to 100Terohms
- \* Various Models related with Voltage Ratings from 2.5kV to 48kV in free air.
- \* NCR: Non-contact resistance design between resistive parts and termination.

Model Nr.	Wattage in 25°C free air	1) Wattage in Molded	2) Max. Working Voltage[kV]	Impulse Voltage [kV] 1.2/50µS	Std. Resistance [ ohm ]		Dimensions in millimeters (inches)			SMD type
					Min.	Max.	A	B	C	
HS15	0.2	N/A	2.0	4.0	100K	500M	15+/-1.5 (.590)	5+/-1.5 (.197)	0.8	N/A
HS19	0.3	N/A	2.5	5.0	100K	500M	19+/-1.5 (.748)	5+/-1.5 (.197)	0.8	N/A
HS25	0.5	N/A	4.5	9.0	100K	500M	25.4+/-1.5 (1.0)	5+/-1.5 (.197)	0.8	N/A
HS24	1.5	N/A	4.0	8.0	100K	500M	24.0+/-1.5 (.944)	8+/-1.0 (.314)	1.0	available
HS39	2.5	0.8	10.0	20	100K	1G	39.0+/-1.5 (1.50)	8+/-1.0 (.314)	1.0	available
HS52	3.0	1.0	15.0	30	100K	1G	52.0+/-1.5 (2.04)	8+/-1.0 (.314)	1.0	available
HS76	4.5	1.5	22.5	40	1M	1G	76.0+/-2 (3.0)	8+/-1.5 (.314)	1.0	on request
HS102	6.0	2.0	32.0	50	1M	1G	102+/-2 (4.01)	9+/-1.0 (.354)	1.0	N/A
HS117	7.0	2.3	35.0	60	1M	1G	117+/-2 (4.6)	9+/-1.0 (.354)	1.0	N/A
HS127	7.5	2.5	37.0	65	1M	1G	127+/-2 (5.0)	9+/-1.0 (.354)	1.0	N/A
HS137	8.0	2.7	40.0	70	1M	1G	137+/-2 (5.4)	9+/-1.0 (.354)	1.0	N/A
HS152	9.0	3.0	48.0	77	1M	1G	152+/-2 (6.0)	9+/-1.0 (.354)	1.0	N/A
HS202	13.5	4.5	64.0	100	1M	1G	202+/-2	10+/-1.0	1.0	N/A

+ Custom dimension & specification , Ohmic Value available upon request.

+ Voltage restricted by the rated power

+ Above Electrical specification applicable for : From HS15 to HS24 ; 0.1MΩ to 200MΩ . From HS39 to HS152 ; 0.1MΩ to 1GΩ only

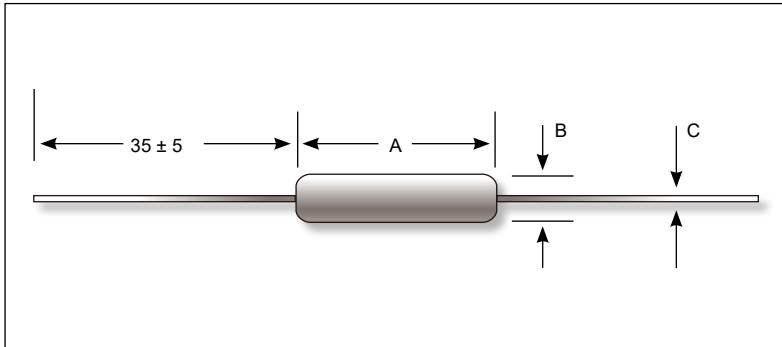
1) in fully epoxy/or silicone rubber molded case condition, precision high voltage dividers required very long life stability in harsh condition

2) Vdc, Vrms standard.

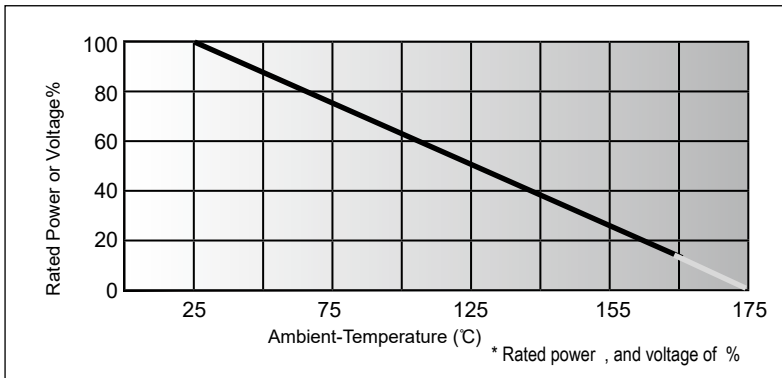
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## DIMENSIONS [mm]



## DERATING CURVE



## APPLICATION GUIDE ; HS SERIES

- Automated Test (ATE)
- Medical (Imaging)
- Ion Source
- Chromatography (Gas)
- Medical (Radiation Therapy)
- Military , Radar ,Laser ,Plasma
- Measurements (High Voltage)
- HV Capacitor Charging, Discharging
- Electric Power Transmission High Voltage
- Medical (Blood Analyzers)
- Corona Generators
- Multichannel Analyzers
- Ozone Generating
- Detectors
- Nuclear Instrumentation
- Electron Beam
- Pulse Generators
- Surface Analysis
- C T , MRI
- Electrophoresis
- Image Intensifier
- Surface Analysis
- Piezo. Focusing (Poling)
- High Voltage Dividers
- Stress Testing
- Agricultural Sensors
- Klystron, Magnetron ,Microwave

## SPECIFICATIONS

### Resistance Tolerance :

1% 2% 5% & 0.5%. And special tolerance (from 0.1MΩ to 100MΩ ; 0.1%, 0.25% as special order available upon request for HS15 HS19 HS25 )

### Endurable Harsh to Environment (Temperature) :

-55°C to +195°C , Max.

breakable temperature on resistives is 600°C (for70min.)

### Temperature Coefficient of Resistance:

Std. 75ppm/°C referenced to 25°C,

ΔR taken at -25°C and +70°C,

Other special TCR on request

(20ppm/°C,35ppm/°C,50ppm/°C,60ppm/°C ,85ppm/°C)

### Overload/Voltage :

5 times rated power with applied voltage not to exceed

1.5times maximum continuous operating

voltage for 5 seconds ΔR 0.2% max.

### Thermal Shock :

Mil-Std-202, Method- 107, Cond. C, ΔR 0.2% max.

### Load Life :

1.000 hours at rated power ΔR 0.2% max.

### Moisture Resistance :

Mil-Std-202, Method 106, ΔR 0.25% max.

### Lead Material :

Tinned plated copper solderable semi-flexible axial wire.

### Insulation Resistance :

10,000MΩ Min.

### Termination Cap of Material:

Tinned Cap.

### Encapsulation :

Epoxy conformal.

### Resistive Material :

Thick Film.

Contact method between Resistives and

### Termination Caps :

Individual Conductive Pads . So , called "NCR"

Non-contact resistance.

cf.: The described specifications & dimensions subject to change without notice.