

## High Power Voltage Resistors

### Token High Voltage Resistors (RI85) Break Through 800 Wattage in High Power Applications

#### ▶ Preview

Token Electronics RI85 series has been developed to provide design engineers with high quality, high power, high voltage dividers for use in sophisticated system.

The RI85 resistors use Token's proprietary thick film metal glaze resistive element and Serpentine Pattern Design which provides ideal cost efficient, stability, high power and high voltage characteristics for a wide range of measurement, voltage divider circuits, and control functions in high voltage power electronics applications.

Token RI85 Power Voltage Resistors are able to absorb large amounts of energy at high voltage while remaining non-inductive and heavy load characteristics. RI85 Resistors conform to the RoHS directives and Lead-free. Customized design, low TCR, resistance values, and tighter tolerances are available on request.

The RI85 non-inductive metal glazed resistors are manufactured on proceeding of tube designed with tab terminal, thick-film printing, firing and laser trimming.

By utilizing specific ceramic core materials with optimum processing, Token are able to control, very tightly in manufacturing, the important ultra-stable performance parameters TCR less than 100 ppm/°C. Voltage handle up to 100 KV and Wattage available 200W to 800W. This unique process is also offered in specific resistance values in a wide variety of sizes and terminations. The extraordinary operating stability of the Type RI85 resistors will improve the performance of your high voltage system.

The RI85 Power Voltage Series is RoHS compliant and lead free. For customized designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact us.

#### ▶ Features

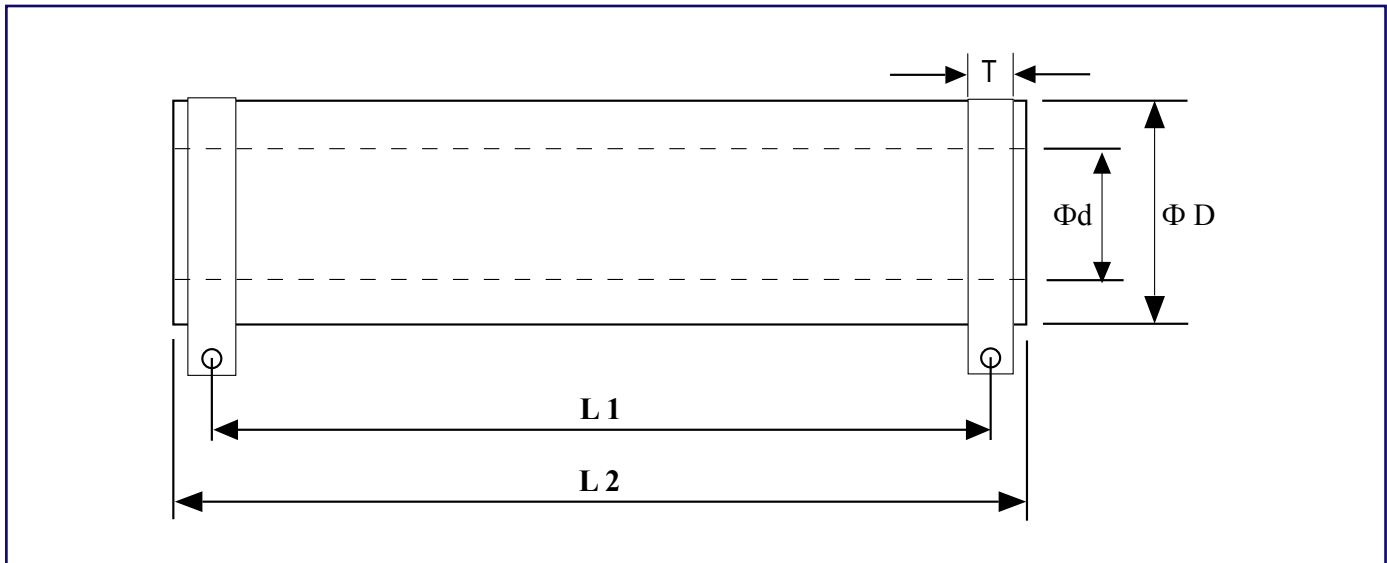
- Rated Wattage from 200W to 800W.
- Temperature Coefficient  $\leq 100$  ppm/°C.
- Resistance Range from 100K $\Omega$  to 1Tera $\Omega$ .
- Resistance Tolerance K( $\pm 10\%$ ), M( $\pm 20\%$ ).
- Max Working Voltage from 50KV to 100KV.

#### ▶ Applications

- X-ray/imaging equipment,
- EMI/lightning supression, Energy research,
- Pulse modulators, Radar Pulse-forming networks,
- Impulse voltage generators, Arc furnace damping,
- Capacitor crowbar circuits, High voltage snubber circuits.



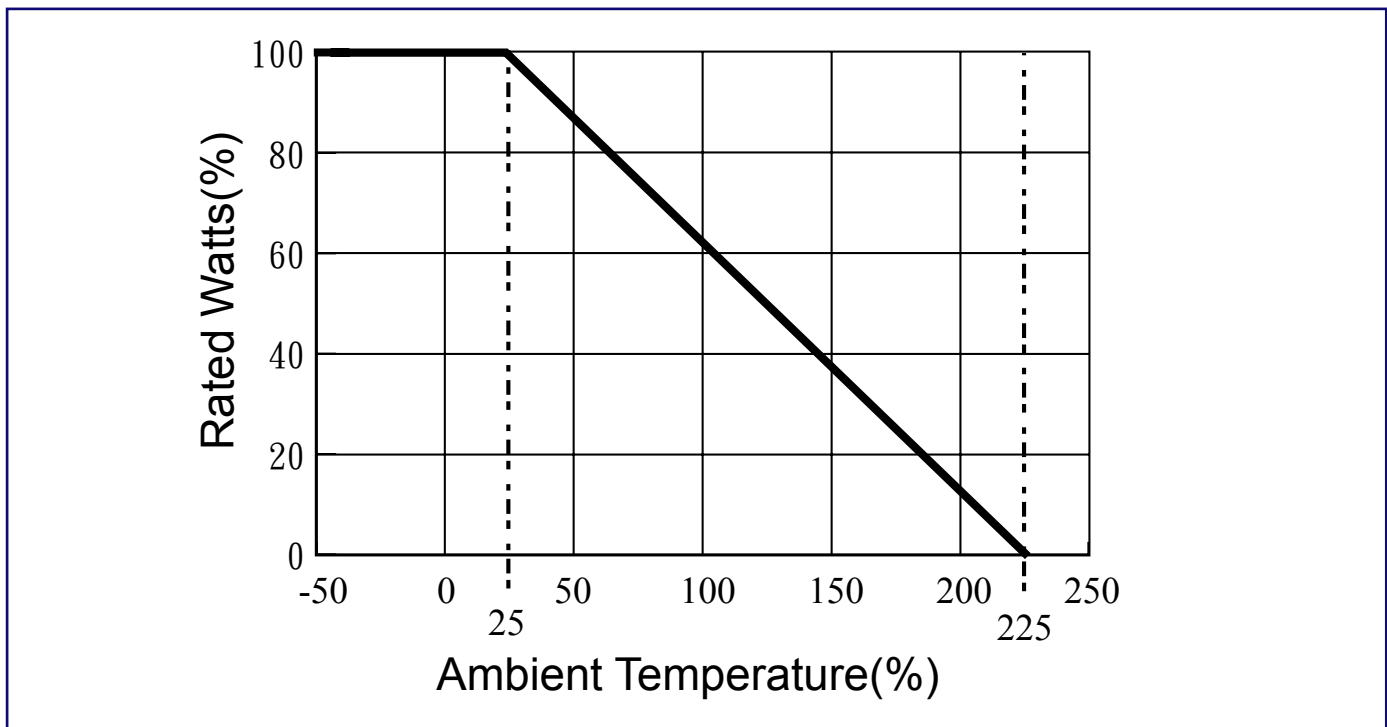
## ► Dimensions & Specification



Type	Power Rating	Resistance Value (Ω)	Resistance Tolerance	Temperature Coefficient (PPM/°C)	Dimensions (Unit: mm)					Max working voltage
					ΦD±2	Φd±2	L1±5	L2±5	T±1	
RI85	200W	100K~100G	10% (K)	≤100	28	15	185	200	10.5	50KV
RI85	500W	100K~500G	20% (M)	≤100	34	20	205	220	15	50KV
RI85	800W	100K~1T		≤100	55	40	205	220	15	100KV

Remark: Rated Continuous Working Voltage (RCWV) shall be determined from  
 RCWV = square root (power rating × resistance value) or Max Working Voltage listed above, whichever less.

## ► Power Derating Curve



## ▶ Performance Specifications

Test Item	Test Methods	Characteristics
Moisture resistance	MIL Std. 202, method 106 (IEC68-2-3)	$\Delta R/R \leq \pm 0.1\%$ typ., 0.25% Max.
Insulation resistance	500V 25°C 75% relative humidity	10G $\Omega$ Min.
Dielectric strength	25°C 75% relative humidity	1000V Min.
Overload	1.5×Pnom. 5 sec (do not exceed max. voltage)	$\Delta R/R \leq \pm 0.1\%$ typ., 0.25% Max.
Thermal shock	MIL Std. 202, method 107 Cond. C (IEC68-2-14)	$\Delta R/R \leq \pm 0.1\%$ typ., 0.2% Max.
Load life	1000h at rated power (IEC115-1)	$\Delta R/R \leq \pm 0.1\%$ typ., 0.25% Max.

## ▶ RI85 Non-Inductive & Serpentine Pattern - Advance Technique

### Non-Inductive Performance:

- RI85 Non-Inductive Design which uses a serpentine resistive pattern that offers for zigzagging lines to carry current in opposite directions, thereby achieving maximum neutralization of flux fields over the entire length of the resistor.
- This efficient non-inductive construction without derating of any performance advantages is ideal for applications where high frequency is required.



### Serpentine Pattern Screen Printing Design:

- Type RI85 Precision High Voltage Resistors combine Token's Non-Inductive serpentine pattern, high thru-put screen printed silicone coating.
- The alignment of the gap in the serpentine resistor pattern with the gap in the coating pattern provides a complete encapsulation of the resistor element.
- The cap and lead assemblies are pressed onto the resistor core, finishing the resistor and providing rugged terminal attachment.

## ▶ How to Order

RI85

❶

200W

❷

1M

❸

K

❹

- ❶ Product Type.
- ❷ Rated Power.(W)
- ❸ Resistance Value. ( $\Omega$ )
- ❹ Resistance Tolerance.

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