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(HI82)
Ultra-Precision High Voltage Film Resistors

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Product Introduction

HI82 sets a new standard for high value, ultra-stable precision high voltage film resistors

Features :

- High voltage thick film precision technology resistor.
- Resistance up to 10TΩ. Low temperature coefficient, low voltage coefficient.
- Radial leads, variable lead spacing by bending. Climatic protection by silicone coating.

The high performance high-voltage applications require the use of high voltage resistors in applications with long-term stability and good temperature coefficient. Token Electronics has introduced ultra-stable high-precision HI82 high voltage resistors to meet these needs.

Application of Token's proven precision serpentine pattern design capability, developed a precision radial-lead type HI82 resistor to optimize low-temperature coefficient performance and long-term stability. Through the use of new alloy ruthenium film material, and with the best processing characteristics of planar ceramic chip.

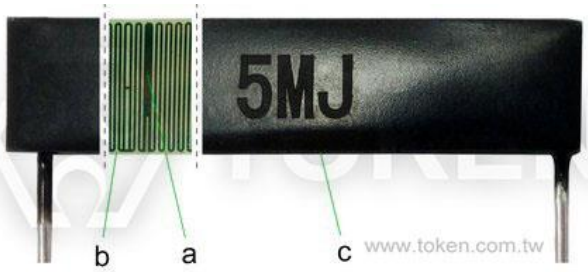
Token can control the manufacture of very precise precision, stabilize the performance parameters of the important operating temperature range. This unique process has a specific resistance value in three sizes.

This unique process has a specific resistance value in three sizes, HI82-30, HI82-40, and HI82-50. Resistance range from 1MΩ to 10TΩ, precision tolerance is 0.25% to 30% available, and the temperature coefficient is 25ppm to 1000ppm. To provide the ideal cost-effective, high stability, precision accuracy, high voltage and other characteristics, is suitable for a variety of measurement, voltage divider circuit and control functions, AC and DC or pulse circuit, and high voltage power electronic equipment.

Token HI82 ultra-precision high-voltage resistors conform with RoHS and lead-free standards and provide more competitive prices and fast delivery service. For technical specifications and special applications, please contact your Token's sales representative, or link to Token official website "High Voltage Resistors" to get more information.

Dimensions

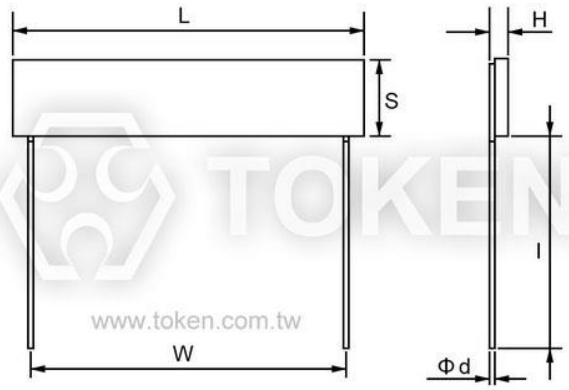
Composition Structure (HI82)



Membrane Material (a)	Ruthenium Paste
Base Material (b)	95% Aluminum Oxide, Al_2O_3
Encapsulating Material (c)	High Temperature Silicone Resin

Ultra-Precision High Voltage Film Resistor Dimensions (Unit: mm) (HI82)

Part Number	L ±2	S ±2	H (Max.)	W ±2	I (Max.)	d ±0.05
HI82-30	30.0	6.0	1.4	27.5	20	0.40
HI82-40	40.0	6.0	1.4	37.8	20	0.40
HI82-50	50.0	12.5	1.4	47.8	20	0.40



Ultra-Precision High Voltage Film Resistor Dimensions (Unit: mm) - (HI82)

Note:

- **L = Length，S = Width，H = Thickness，d = Wire diameter。**
- **W = Standard lead spacing (Other spacing possible by bending)。**

Electrical Characteristics

Technical Characteristics - (HI82)

Part Number	Power Rating P_{70}(W)	Working Voltage (V)	Resistance Range (Ω)	Tolerance (%)	TCR[1] (ppm)	VCR[2] (ppm/V)
HI82-30	1.0	10KV	1M - 100M	0.25/0.5/5/10	25/50/100	2ppm/V
			100M - 1G	1/2/5/10/20	50/100/250	5ppm/V
			1G - 100G	5/10/20/30	250/500	20ppm/V
			100G - 1T	5/10/20/30	500/1000	100ppm/V
HI82-40	1.2	20KV	1M - 100M	0.25/0.5/5/10	25/50/100	1ppm/V
			100M - 1G	1/2/5/10/20	50/100/250	2ppm/V
			1G - 100G	5/10/20/30	250/500	10ppm/V
			100G - 1T	5/10/20/30	500/1000	50ppm/V
HI82-50	3.0	30KV	1M - 100M	0.25/0.5/5/10	25/50/100	1ppm/V
			100M - 1G	1/2/5/10/20	25/50/100	1ppm/V
			1G - 100G	5/10/20/30	100/250	5ppm/V
			100G - 1T	5/10/20/30	250/500	25ppm/V
			1T - 10T	10/20/30	500/1000	100ppm/V

Note:

- **[1] TCR 25/50: Temperature range +25°C ~ +85°C ; [2] The voltage coefficient is measured between 10V and 100V.**
- **Operating Voltage = √ (P * R) , or Max. Operating Voltage listed in above table whichever is lower.**
- **Overloading Voltage = 2.5*√ (P * R) , or Max. Overloading Voltage listed in above table whichever is lower.**
- **Optional specifications on request.**

Environmental Characteristic

Continuous operating voltage	V = √ (P * R)
Measuring voltage	Standard measuring voltage is 10V (50V for values >1G). Different voltages on request.
TCR	in ppm/K; Temperature range +25°C ... +125°C; TCR25/50 and values above 1G: +25°C ... +85°C
Operating temp. range	-55°C ~ +125°C
Climatic category	to EN 60068-1: 55/125/56
Humidity-/contact protection	Lacquer coating. Resistant to most solvents. Isopropyl alcohol recommended for cleaning; Do not use acetone or methylene choloride. Avoid mechanical stress to coating.
Stability: Storage	(125°C/1000h) ≤10G: <1%; >10G: <2%
Stability at Max. voltage	(Max. voltage/1000h) ≤10G: <1%; >10G: <2%

Serpentine Pattern

Advance Technique of Non-Inductive & Serpentine Pattern (HI82)

Non-Inductive Performance:

- RI80 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 High Voltage RI80 Precision 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.

Order Codes

Order Codes (HI82)

HI82	30		1G		F	
Part Number	Rated Power (W)		Resistance Value (Ω)		Resistance Tolerance (%)	
HI82	30	1.0W	1M1	1.1MΩ	C	±0.25%
	40	1.2W	110M	110MΩ	D	±0.5%
	50	3.0W	1G5	1.5GΩ	F	±1%
			10G	10GΩ	J	±5%
					K	±10%
					M	±20%
					N	±30%

Order Codes (HI80P) High-Power High Voltage Resistor

HI80P	20	a	1G	F

Part Number	Rated Power (W)		Type	Resistance Value (Ω)		Resistance Tolerance (%)	
HI80P	20	20W	a	10	10Ω	D	±0.5%
	30	30W	b	1K1	1.1KΩ	F	±1%
	150	150W	c	110K	110KΩ	J	±5%
	300	300W		1M1	1.1MΩ	K	±10%
				110M	110MΩ		
				10G	10GΩ		

Order Codes (HI80T) Ultra-Precision High Voltage Resistor

HI80T	32	500M	B

Part Number	Rated Power (W)		Resistance Value (Ω)		Resistance Tolerance (%)	
HI80T	20	0.8W	10	10Ω	B	±0.1%
	32	1.2W	1K1	1.1KΩ	D	±0.5%
	52	2W	110K	110KΩ	F	±1%
	154	6W	1M1	1.1MΩ		
			500M	500MΩ		