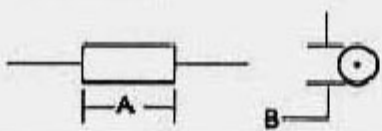




## HR175N .2W Wire Wound Axial Lead Ultra Precision Resistor

### TYPE HR



### Electrical & Physical Specifications:

- A-Length:** 7.92mm (.312")
- B-Diameter:** 3.96mm (.156")
- Lead Dimensions:** .020" D X 1.500" L
- Max Watts @ 1% Tol:** .2
- Max Volts @ 1% Tol:** 100
- Temperature Range:** -65°C. to +125°C.
- Resistance Range ( $\Omega$ ):** .1 to 100K

### HR Series Engineering Attributes:

#### RESISTANCE & TOLERANCES

You can select any Ohmic value or decimal part of an Ohm with tolerances to  $\pm 0.005\%$ . 10 $\Omega$  minimum resistance for  $\pm 0.01\%$  tolerance. See figure #2 shown below.

#### TCR CHARACTERISTIC

##### Standard:

100 $\Omega$  & higher values:  $0 \pm 5$  ppm/°C.

For values below 100 $\Omega$ :  $0 \pm 15$  ppm/°C.

##### Special:

100 $\Omega$  & higher:  $0 \pm 1$  ppm/°C. matching to  $0 \pm 5$  ppm/°C.

Please specify temperature span of operation. The TCR is calculated between +25°C. & +100°C.

#### POWER VS. AMBIENT TEMPERATURE

All Ultra Precision Resistors are designed for full load based upon  $\pm 1\%$  resistance tolerance providing the ambient temperature (+) plus the rise in temperature due to self-heating, does not exceed +125°C. Derated to zero power @ +145°C., See figure #1 shown below.

#### STABILITY

To  $\pm 0.001\%/yr.$  @ +25°C. with no Load.

#### REDUCTION OF THERMAL EMF USING COPPER TERMINALS:

Less than  $\pm 3$  microvolts/°C. emitted.

#### INDUCTANCE

Non-inductive balanced reverse pi windings are standard for the HR series with the exception of the HR103.

#### PROTECTIVE SEAL

Features a stress free base coat as well as an epoxy casing that is resistant to solder heat & solvents.

#### MARKING

PRC stamp, part type & name,  $\Omega$  value & tolerance, physical size permitting.

### Type HR Derating Table\*

For  $\pm 1\%$  resistance tolerance apply up to 100% of rated power to +125 Degrees Celsius. derated to zero @ +145 Degrees Celsius.

For  $\pm 1/2\%$  resistance tolerance apply up to 75% of rated power to +125 Degrees Celsius. derated to zero @ +140 Degrees Celsius.

For  $\pm 1/4\%$  resistance tolerance apply up to 50% of rated power to +125 Degrees Celsius. derated to zero @ +135 Degrees Celsius.

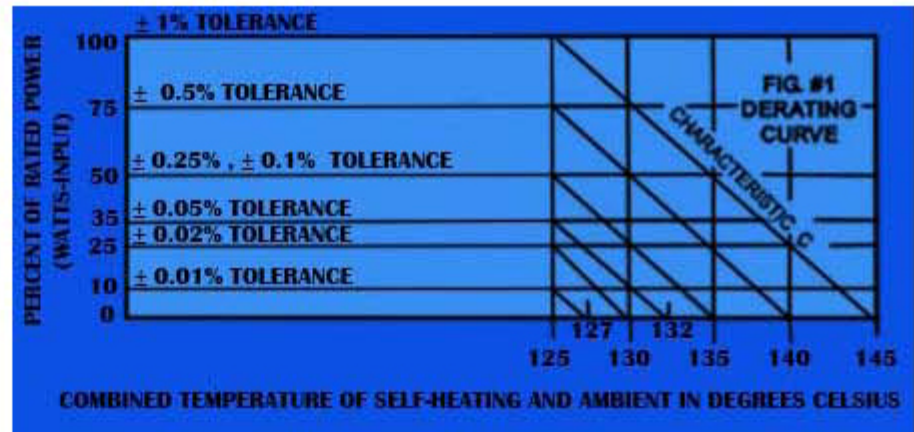
For  $\pm 0.1\%$  resistance tolerance apply up to 50% of rated power to +125 Degrees Celsius. derated

to zero @ +135 Degrees Celsius.

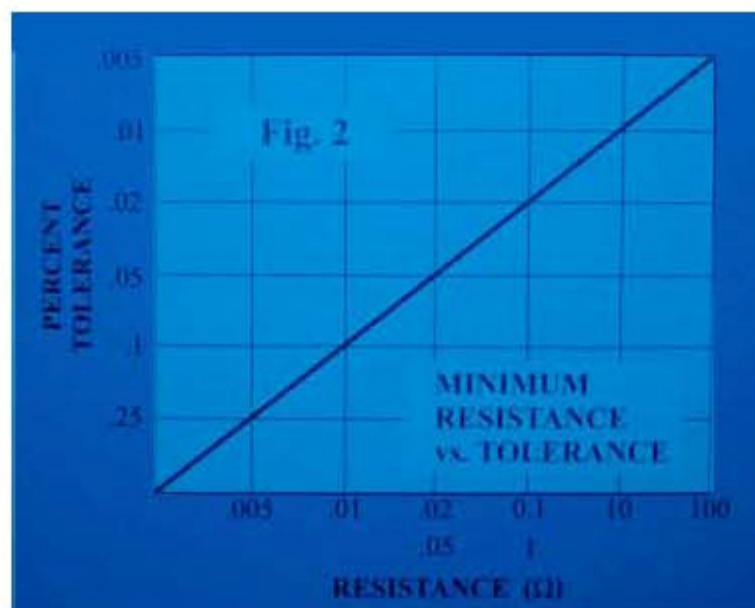
For  $\pm 0.05\%$  resistance tolerance apply up to 35% of rated power to +125 Degrees Celsius. derated to zero @ +132 Degrees Celsius.

\* Percent of Rated Power vs. Combined Temp. of Self-Heating and Ambient (in °C.).

## Detailed Images



## Derating Information



## Minimum Resistance vs. Tolerance

### Details

SKU	HR175N
Type	Axial
Length	7.92mm (.312")
Lead Dimensions	.020" dia. X 1.500" long
Diameter	3.96mm (.156")
TCR Char.	0 $\pm$ 5ppm (Std.) to 0 $\pm$ 1ppm /°C.
Temperature	-65°C. to +125°C.
Resistance	.1 $\Omega$ to 100K $\Omega$
Tolerance	$\pm$ .01% (std.) Ranging from $\pm$ 1% to $\pm$ .005%
Stability	to $\pm$ .001% per year
Max Watts	.2
Max Volts	100
Lead Free	Yes