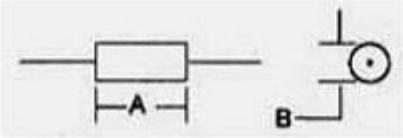
JIN ZON ENTERPRISE CO., LTD.

TEL:886-2-2711-1093~5 FAX:886-2-2731-0902 ,2776-4624
地址：台北市長安東路二段171號4樓之3
Email:jinzon@ms2.hinet.net

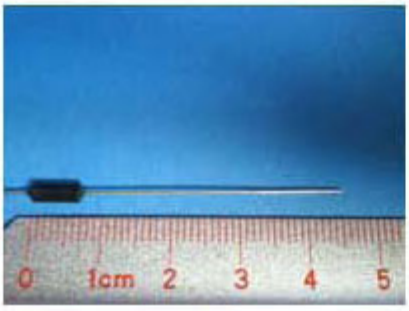
PRC100X Std. Ref. Series 100 Ohm @ 0°C. ±.12% Tol. T.C. +3850 .04W Wire Wound Axial Sensor



PRC100X

Electrical & Physical Specifications:

A-Length:	6.99mm (.275")
B-Diameter:	2.87mm (.113")
Lead Dimensions:	.023"D x 1.0"L
Max Power:	.04W
RTC from 0°C to +100°C:	+3850PPM/°C



Engineering Attributes:

RESISTANCE & TOLERANCES

100Ω @ 0°C. ±.12% Tol (or ± .3°C & 138.50 Ω @ +100°C. ± .22% (or ± .8°C.) per DIN 43760, Class B.

STABILITY OF CALIBRATION

All PRC100 Sensors are closely matched & repeatable part-to-part. They have the ability to reproduce output readings consistently at the same temperature reference points under the same conditions & in the same direction.

STABILITY VS. TIME

The change in the original resistance (Ro) @ 0°C. is less than ±.1°C. or ±.038% after 10 cycles from 0°C. to +150°C..

SHELF LIFE

Shelf life stability is ±0.002%/year @ 25°C. with no load.

POWER RATINGS VS. AMBIENT TEMPERATURE RANGE

The PRC100 is an ideal compensator to offset drift or negative self-generating change in resistance resulting from an excitation of power to .25W @ +125°C. to zero power @ +125°C.

THERMAL TIME CONSTANT

The time required for our PRC100 to indicate 63.2% of a new impressed temp. from a step change of 0°C. to +100°C. can be customized to your specs, as low as less than 1 second.

CONSTRUCTION DETAILS

Wire: Ni (Nickel), Co (Copper),Mn (Manganin) & Fe (Iron)

Substrate: epoxy or ceramic filled

Terminals: solderable hot-tinned copper

Protective Seal: Moisture & solvent resistant epoxy

CUSTOM APPLICATIONS

PRC100 custom sensors are also available in any Ohmic value from 50Ω to 5KΩ in tolerances from ± 0.03% (1/4 Din) to ± 0.24% (DIN x 2) You can click the link to view our entire PRC100 Custom Series and see if your specs are compatible with any of the part types from this series.

Click here for PRC100 Tracking Chart

PRC100 Standard Reference Series Overview

A series of varying resistor styles and sizes available, depending on the desired application. All part types in this series read 100Ω @ 0°C. ±.12% with an average sensitivity of 0.00385Ω/Ω/°C. These low-cost sensors track like platinum standards but are much more versatile. They are linear tracking special-purpose

temperature sensors with TCR characteristics to +6000 ppm/°C. & follow the well defined curve and linear slope of platinum. All part types are in stock & ready for immediate delivery

RESISTANCE TEMPERATURE CHARACTERISTIC (Rt)

Rt is defined by IEC standard, pub. 751: alpha = 0.00385 ohm/ohm/°C.*

For range **-40°C. to 0°C :** $RT = Ro[1+At+Bt^2+C(t-100°C.)\ t^3]$

For range **0°C. to +150°C :** $RT = Ro(1+At+Bt^2)$

Constants in this equation:

A = 3.79782×10^{-3} **B** = 6.502×10^{-7} **C**= 4.3735×10^{-12}

$Rt = Ro[1+At+Bt^2]$

$Rt = 100[1+(3.79782 \times 10^{-3} \times 100)+(6.502 \times 10^{-7} \times 100^2)]$

$Rt = 100[1+.379782+.006502]$

$Rt = 100 \times 1.386284$

Rt = 138.628 ohms at 100°C.

$Rt = Ro[1+At+Bt^2+C(t-100)\ t^3]$

$Rt = 100[1+(-.1519128)+(.00104032)+(.00003918656)]$

$Rt = 100 \times .8491667$

$Rt = 100[1+(3.79782 \times 10^{-3} \times -40)+(6.502 \times 10^{-7} \times -40^2)+ (4.3735 \times 10^{-12} \times (-40-100) \times -40^3)]$

Rt = 84.916 ohms at -40°C.

*Theoretical curve & slope based on values of the International Practical Temperature Scale (IPTS-68 & 90).

Fixed points are in Degree Celsius (°C.) Ro = 0°C. The other reference temperature used in the equation is +100°C however this can be replaced by any temperature desired with respect to the base temperature of 0°C. The PRC100 Std. Ref. follows a well-defined theoretical curve & linear slope from base 0°C. proving that most reference points are calculable within very close tolerances (Ratio=Rt/Ro)

Details

SKU	PRC100X Std. Ref. Series
Type	Axial
Length	6.99mm (.275")
Lead Dimensions	.023" dia. x 1" long (min.)
Diameter	2.87mm (.113")
TCR Char.	+3850 ppm/°C. between 0°C & +100°C.
Power Rating	0-.04W
Res. & Tol. at 0° C	100Ω ±0.12%
Temperature	-65°C. to +150°C
Resistance	100Ω @ 0°C.
Tolerance	±.12%
Stability	to ±.005%/yr. at +25°C (No Load)
Max Watts	.04
Max Volts	-
Lead Free	Yes