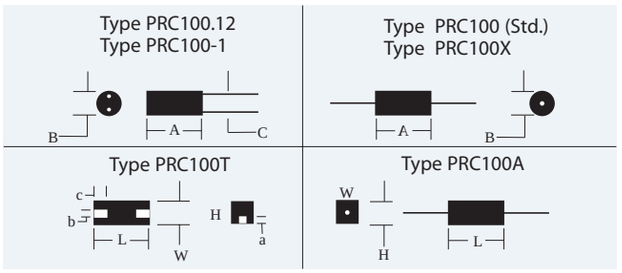
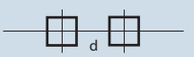
PRC100 SENSORS



What The PRC100 Means To You:

The PRC100 (Std. Reference) ..... 100Ω at 0°C. ±0.12% with an average sensitivity of 0.00385 ohm/ohm/°C is in-stock for immediate delivery. The PRC100 Custom Series is more than a platinum alternative because of its versatility.

PAD LAYOUT 

RECTANGULAR AXIAL & SMD 100 SENSORS

PRC Type	Power Rating	Max. Volts	H mm ins.	L mm ins.	W mm ins.	a	b	c	d	e (1"L)	RESISTANCE & TOL @ 0°C	RTC (0°C to +100°C)
PRC100A PRC100T	0.1W	100V	3.18 .125"	9.14 .360"	3.18 .125"	.075"	.075"	.100"	.260"	.020"	100Ω ±0.12%	+3850 ppm/°C.

PRC100 (STD. REFERENCE) 100 OHMS IN-STOCK

PRC Type	Power Rating	BODY DIMENSIONS LENGTH A	BODY DIMENSIONS DIAMETER B	LEADS (Tinned Copper)	RESISTANCE & TOL @ 0°C	RTC (0°C to +100°C)
PRC100X	0-.04W	.275"	.113"	.023"D x 1.0"L	100Ω ±0.12%	+3850 ppm/°C.
PRC100 (Std.)	0-.25W	.600"	.188"	.029"D x 1.4"L	100Ω ±0.12%	+3850 ppm/°C.
PRC100.12	0-.1W	.450"	.156"	.023"D x .63"L	100Ω ±0.12%	+3850 ppm/°C.
PRC100-1	0-.25W	.600"	.188"	.023"D x .63"L	100Ω ±0.12%	+3850 ppm/°C.

ENGINEERING DATA:

1. RESISTANCE AND TOLERANCE

PRC100 (Std. Reference): 100Ω at 0°C
±0.12% (or ±0.3°C) and 138.50Ω at +100°C
±0.22% (or ±0.8°C) per DIN 43760, Class B.
PRC100 (Custom Series): You can select any value from 50Ω to 5 Kilohms in tolerances from 1/4 DIN (±0.03%) to 2 x DIN (±0.24%).

2. 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:
$Rt = R_O [1+At+Bt^2 + C(t-100°C)t^3]$
... for range 0°C. to +150°C:
$Rt = R_O (1+At+Bt^2)$

Where the constants are:
$A = 3.79782 \times 10^{-3}$
$B = 6.502 \times 10^{-7}$
$C = 4.3735 \times 10^{-12}$

Fixed points are in degrees Celsius, R_O = 0°C
The other (Ref.) temperature is + 100°C, but any temperature can be used in the equation with respect to Base 0°C. The PRC100 Std. Ref. follows a well-defined theoretical curve and linear slope from Base 0°C proving that most reference points are calculable within very close tolerances (Ratio = Rt/R_O).

3. STABILITY OF CALIBRATION

All PRC100 sensors are closely matched and repeatable part-to-part. They are able to consistently reproduce output readings consecutively at the same temperature reference points ... under the same conditions and in the same direction.

4. STABILITY (R_O) VS. TIME

The change in the original resistance (R_O) at 0° C after 10 cycles to +150°C is less than ±0.1°C or ±0.038% max. Shelf life stability is ± 0.002%/yr. at 25°C (no load).

5. POWER RATINGS VS. AMBIENT TEMPERATURE RANGE

The PRC100 is ideal as a compensator to offset drift or negative self-generating changes in resistance as a result of an excitation of power to 0.25 watt at +125°C to zero power at +150°C.

6. THERMAL TIME CONSTANT

The time required for the PRC100 sensor to indicate 63.2% of a new impressed temperature from a step change of 0°C to +100°C can be customized to < 1 second

7. PRC100 (Std. Ref.) CONSTRUCTION

Wire: Ni, Co, Mn & Fe.
Substrate: Epoxy or ceramic form.
Terminals: Solderable hot-tinned copper.
Protective Seal: Moisture and solvent resistant epoxy.

8. MARKING (Std. Reference)

PRC100X PRC100A PRC100T	PRC100 ±0.12% TC.385%
PRC100.12 TC.385%	PRC100-1 ±0.12% TC.385%

9. CUSTOM APPLICATIONS

PRC100 (Custom) Series Sensors are available in any ohmic value with TCRs from +3000ppm to +4000ppm/°C in 50ppm steps with the same linear tracking characteristics as the Std. Ref.

Custom Marking: e.g:
1K ohms = PRC1000
10K ohms = PRC10000, etc.

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

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