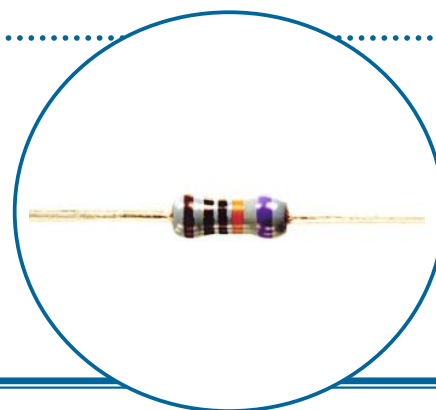


Precision Metal Film Resistors

Provisional

PR Series

- **Low cost precision resistors**
- Tolerances down to $\pm 0.1\%$
- TCR down to $15\text{ppm}/^\circ\text{C}$
- Available with formed leads



Electrical Data

| | | PR4 | PR5 |
|---|------------------------------|-------------------|-----|
| Power rating at 70°C | watts | 0.25 | 0.5 |
| Resistance range | ohms | 100 to 1M | |
| Limiting element voltage | volts dc or ac peak | 250 | 350 |
| TCR ($20^\circ\text{C} - 70^\circ\text{C}$) | ppm/ $^\circ\text{C}$ | 15, 25, 50 | |
| Resistance Tolerance | % | 0.1, 0.25, 0.5, 1 | |
| Standard Values | | E24, E96 | |
| Thermal Impedance | $^\circ\text{C}/\text{watt}$ | 140 | 112 |
| Ambient temperature range | $^\circ\text{C}$ | -55 to +155 | |

Table of Resistance Restrictions

| TCR ppm/ $^\circ\text{C}$ | Tolerance % | | | |
|------------------------------|-------------|-------------|-----------|---|
| | 0.1 | 0.25 | 0.5 | 1 |
| 15 | 100R – 240K | | | |
| 25 | 100R – 240K | 100R – 500K | 100R – 1M | |
| 50 | | | | |

General Note

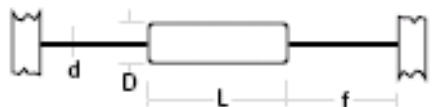
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Physical Data

| Dimensions (mm) & Weight (g) | | | | | | | |  |
|------------------------------|-------|-------|-------|-------|-------------------|-----------------|---------|---|
| Type | L max | D max | f min | d nom | PCB mount centres | Min bend radius | Wt. nom | |
| PR4 | 6.2 | 2.5 | 21 | 0.6 | 10.2 | 0.6 | 0.3 | |
| PR5 | 9.0 | 3.6 | 19.6 | 0.8 | 12.7 | 1.2 | 0.5 | |

Construction

The resistance element is a precisely controlled thin film of metal alloy sputtered on to a high purity ceramic core, protected by a moisture-resistant, high dielectric strength coating applied so that terminations remain completely clear. This permits a well defined body length (clean lead to clean lead dimension L).

Marking

25ppm/°C grade resistors are colour coded with 5 bands for value and tolerance. For other grades a 6th band is added for the TCR. This is red for 50ppm/°C and orange for 15ppm/°C. IEC 62 colours are used.

Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

Terminations

Material: Solder-coated copper wire
Strength: The terminations meet the requirements of IEC 68.2.21
Solderability: The terminations meet the requirements of

Performance Data

| | | Maximum |
|-----------------------------------|--------------|---------------|
| Load: 1000hrs at 70°C | $\Delta R\%$ | 0.5 |
| Derating from rated power at 70°C | | zero at 155°C |
| Short term overload | $\Delta R\%$ | 0.25 |
| Climatic | $\Delta R\%$ | 0.5 |
| Climatic category | | 55/125/56 |
| Long term damp heat | $\Delta R\%$ | 0.5 |
| Temperature rapid change | $\Delta R\%$ | 0.25 |
| Resistance to solder heat | $\Delta R\%$ | 0.25 |
| Vibration and bump | $\Delta R\%$ | 0.1 |
| Insulation resistance | ohms | > 1G |
| Voltage proof | volts | 700 min |

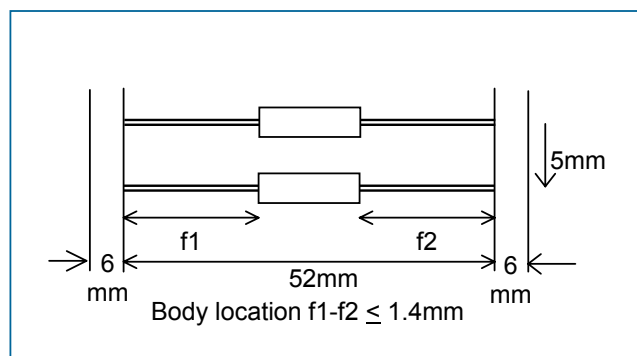
Packaging

All PR resistors are supplied tape packed ready for loading on to automatic sequencing and insertion machines.

Components wires will not protrude beyond the outside edge of the tapes.

Alternative packaging is available by request.

Lead formed resistors can also be supplied. Standard options of Lancet, Radial and Goalpost forming are available.



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Ordering Procedure

Example: PR4 with a TCR of 15ppm/°C at 100 kilohms and 0.1% tolerance and packed in an ammo box with a standard quantity of 5000pcs

Type **PR4** **Y** — **100K** **B** **I**

TCR **Y**

| | |
|---|-------|
| Y | 15ppm |
| | 25ppm |
| C | 50ppm |

Value (use IEC62 code) **100K**

Tolerance (use IEC62 code) **B**

| | |
|---|-------|
| B | 0.1% |
| C | 0.25% |
| D | 0.5% |
| F | 1% |

Packing **I**

| | | | |
|---|-----------|-----|------------|
| I | Ammo Pack | PR4 | 5000 / box |
| | | PR5 | 2500 / box |

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