

Type R Series

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The resistive element comprises a thin film of nickel-chrome alloy evaporated onto a high thermal conductivity ceramic element. Metal end caps are force fitted to the element prior to spiralling to value. Tinned copper lead wires are welded to the end caps and the components are then coated. One coat of phenolic resin is followed by three coats of epoxy resin. All resistors are tested for value and tolerance.

Key Features

- Precision metal film resistors with tolerance to 0.1% and temperature coefficients to 15ppm.
- Metal film resistors have excellent stability under load and severe environmental conditions. They exhibit very low noise current and voltage coefficients. Precision metal film resistors are particularly suitable in all applications where long-term stability is important.

Characteristics - Electrical

|  | YR8         | ER8  | CR8  | YR1  | ER1  | CR1  | YR2  | ER2  | CR2  |
|--|-------------|------|------|------|------|------|------|------|------|
| Rated Power @ 70 °C (W)                | 0.125       |      |      | 0.25 |      |      | 0.5  |      |      |
| Resistance Range (ohms) Min            | 51R1        |      |      | 10R  |      |      | 10R  |      |      |
| Max                                    | 511K        |      |      | 1M0  |      |      | 1M0  |      |      |
| Tolerance (%)                          | 0.1         |      |      | 0.25 |      |      | 0.5  |      |      |
| Code Letter                            | B           |      |      | C    |      |      | D    |      |      |
| Temperature Coefficient (ppm/°C)       | ± 15        | ± 25 | ± 50 | ± 15 | ± 25 | ± 50 | ± 15 | ± 25 | ± 50 |
| Selection Series                       | E96         |      |      |      |      |      |      |      |      |
| Limiting Element Voltage - Nominal (V) | 200         |      |      | 250  |      |      | 350  |      |      |
| Maximum Overload Voltage (V)           | 400         |      |      | 500  |      |      | 700  |      |      |
| Operating Temperature Range (°C)       | -65 to +155 |      |      |      |      |      |      |      |      |
| Dielectric Strength (V)                | 500         |      |      |      |      |      |      |      |      |
| Insulation Resistance Min Dry (Mohms)  | 10,000      |      |      |      |      |      |      |      |      |
| Voltage Coefficient Max (ppm/V)        | 5           |      |      |      |      |      |      |      |      |

Dimensions



| Style | L*        | D         | d nom |
|-------|-----------|-----------|-------|
| R8    | 3.3 ± 0.1 | 1.7 ± 0.2 | 0.45  |
| R1    | 6.3 ± 0.3 | 2.3 ± 0.2 | 0.6   |
| R2    | 9.5 ± 0.5 | 3.5 ± 0.5 | 0.6   |

\* Length is measured in accordance with IEC 294

Derating Curve



Surface Temperature Vs Load



## Precision Metal Film Fixed Resistors

### Type R Series

#### Mounting

The resistors are suitable for processing on automatic insertion equipment and cutting and bending machines.

#### Marking

The resistors are marked with a five-band colour code in accordance with IEC 62.

#### Packaging

R series colour coded resistors are normally supplied taped in 'ammo' boxes of 1000 pieces. All tape specifications are in accordance with IEC286-1.

#### Performance Characteristics

Evaluation of the performance characteristics is carried out with reference to IEC specifications QC 400 000 and QC 400 100.

| TEST REF | Long Term Tests $\pm(1\% + 0.05 \text{ ohm})$     |
|----------|---|
| 4.23     | Climatic sequence                                 |
| 4.24     | Damp heat, steady state                           |
| 4.25.1   | Endurance at 70 °C                                |
| 4.25.3   | Endurance at 125 °C                               |
| TEST REF | Short Term Tests $\pm(0.25\% + 0.05 \text{ ohm})$ |
| 4.13     | Overload  |
| 4.16     | Robustness of terminations                        |
| 4.18     | Resistance to soldering heat                      |
| 4.19     | Rapid change of temperature                       |
| 4.22     | Vibration   |

#### How to Order

Orders for these components should include the following information:-  
Type, tolerance code letter and value e.g. **YR1 B 24K3**

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