

## Type ROX Series

### Key Features

- High Power with Small Size for Space Saving
- Excellent Long Term Stability
- Complete Flameproof Construction
- High Surge/Overload Capability
- Controlled Temperature Capability
- Solvent Resistant Coat and Code
- Special Lead Formations Possible



The resistive element comprises a metal oxide film deposited on a ceramic former. The element is protected by a flameproof coating which will withstand overload conditions without flame or mechanical damage. They are recommended for use in applications such as line protection etc...

### Characteristics - Electrical

|   | ROX05                                       | ROX1 | ROX2 | ROX05S | ROX1SS | ROX1S | ROX2S | ROX3S | ROX5S |
|---|---|------|------|--------|--------|-------|-------|-------|-------|
| <b>Rated Power @ 70°C (W):</b>                | 0.5   | 1    | 2    | 0.5    | 1      | 1     | 2     | 3     | 5     |
| <b>Resistance Range (ohms) Min:</b>           | 0.1   | 0.1  | 0.1  | 0.1    | 0.1    | 0.1   | 0.1   | 0.1   | 0.1   |
| <b>Max:</b>                                   | 330K  | 470K | 560K | 100K   | 200R   | 270K  | 470K  | 560K  | 560K  |
| <b>Tolerance and Code Letter:</b>             | 2% (G) / 5% (J) 1% (F) available on request |      |      |        |        |       |       |       |       |
| <b>Temp. Coefficient Max (ppm/°C):</b>        | ± 350                                       |      |      |        |        |       |       |       |       |
| <b>Selection Series:</b>                      | E24   |      |      |        |        |       |       |       |       |
| <b>Limiting Element Voltage (V):</b>          | 250   | 350  | 350  | 250    | 350    | 350   | 350   | 350   | 500   |
| <b>Maximum Overload Voltage (V):</b>          | 400   | 600  | 600  | 400    | 400    | 600   | 600   | 600   | 800   |
| <b>Max Intermittent Overload Voltage (V):</b> | 500   | 750  | 750  | 500    | 500    | 750   | 750   | 750   | 1500  |
| <b>Operating Temp. Range (°C):</b>            | -55 to +155                                 |      |      |        |        |       |       |       |       |
| <b>Climatic Category:</b>                     | 55/155/42                                   |      |      |        |        |       |       |       |       |
| <b>Dielectric Strength (V):</b>               | 250   | 350  | 350  | 250    | 350    | 350   | 350   | 350   | 500   |
| <b>Insulation Resistance (Mohms):</b>         | 1,000                                       |      |      |        |        |       |       |       |       |

### Mounting

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

### Marking

The resistors are marked with a four-band colour code in accordance with IEC 62. Grey base colour for Standard Range, Sea Blue colour for "S" Range.

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### Dimensions



#### Standard Range Leaded

| Style | D max | L Max | l±/3 | d±/-0.05 |
|-------|-------|-------|------|----------|
| ROX05 | 3.5   | 10    | 28   | 0.54     |
| ROX1  | 5     | 12    | 25   | 0.7      |
| ROX2  | 5.5   | 16    | 28   | 0.7      |

#### Standard Range Pre-formed

| Style | P1 ±0.5 | P2 ±2 | H1       | H2     | h max |
|-------|---------|-------|----------|--------|-------|
| ROX05 | 12.5    | 12.5  | 7.5 ±1.5 | 3.5 ±1 | 2.0   |
| ROX1  | 15      | 15    | 7.5 ±1.5 | 3.5 ±1 | 2.0   |
| ROX2  | 20      | 20    | 7.5 ±2.0 | 3.5 ±1 | 3.0   |

#### "S" Range Leaded

| Style  | D max | L Max | l±/3 | d±/-0.05 |
|--------|-------|-------|------|----------|
| ROX05S | 2.5   | 7.5   | 28   | 0.54     |
| ROX1SS | 2.5   | 7.5   | 28   | 0.54     |
| ROX1S  | 3.5   | 10    | 28   | 0.7      |
| ROX2S  | 5     | 12    | 25   | 0.7      |
| ROX3S  | 5.5   | 16    | 28   | 0.7      |
| ROX5S  | 8     | 25    | 38   | 0.75     |

#### "S" Range Pre-formed

| Style  | P1 ±0.5 | P2 ±2 | H1       | H2     | h max |
|--------|---------|-------|----------|--------|-------|
| ROX05S | 10      | 10    | 7.5 ±1.5 | 3.5 ±1 | 2.0   |
| ROX1SS | 10      | 10    | 7.5 ±1.5 | 3.5 ±1 | 2.0   |
| ROX1S  | 12.5    | 12.5  | 7.5 ±0.5 | 3.5 ±1 | 2.0   |
| ROX2S  | 15      | 15    | 7.5 ±1.5 | 3.5 ±1 | 2.9   |
| ROX3S  | 20      | 20    | 7.5 ±2.0 | 3.5 ±1 | 3.0   |
| ROX5S  | 30      | 30    | 7.5 ±2.0 | 3.5 ±1 | 3.0   |

### Power Derating Curve



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### Packaging



| New Style Reference | Quantity per Ammo Pack | Std tape Spacing *S ±1 | Component Spacing c ±0.5 |
|---------------------|------------------------|------------------------|--------------------------|
| ROX05               | 2,000                  | 52                     | 5                        |
| ROX1                | 1,000                  | 52                     | 5                        |
| ROX2                | 1,000                  | 63                     | 10                       |
| ROX05S              | 2,000                  | 52                     | 5                        |
| ROX1SS              | 2,000                  | 52                     | 5                        |
| ROX1S               | 2,000                  | 52                     | 5                        |
| ROX2S               | 1,000                  | 52                     | 5                        |
| ROX3S               | 1,000                  | 63                     | 10                       |
| ROX5S               | 500                    | 63                     | 10                       |

\* Other tape spacings available on request  
Other packaging styles are available on request

### Performance Characteristics

The 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 ± (5% + 0.1 ohm)   |
|----------|------------------------------------|
| 4.23     | Climatic sequence                  |
| 4.24     | Damp heat, steady state            |
| 4.25.1   | Endurance at 70°C                  |
| 4.25.3   | Endurance at 235°C                 |
| TEST REF | Short Term Tests ± (1% + 0.05 ohm) |
| 4.13     | Overload                           |
| 4.16     | Robustness of terminations         |
| 4.18     | Resistance to soldering heat       |
| 4.19     | Rapid change of temperature        |
| 4.22     | Vibration                          |

### Heat Rise Chart



### How to Order

| ROX   | 1                          | J   | 100R  | BL                   |
|---|----------------------------|---|---|----------------------|
| Common Part                                       | Style                      | Tolerance   | Value   | Preform              |
| ROX - Flame-Proof Power Metal Oxide Film Resistor | 1 - 1S<br>2 - 2S<br>3 - 3S | G - 2%<br>J - 5%<br>(F - 1% available on request) | 100 ohm (100 ohms) 100R<br>1K0 (1000 ohms) 1K0<br>100 K ohm (100,000 ohms) 100K | BL - Preformed Leads |

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