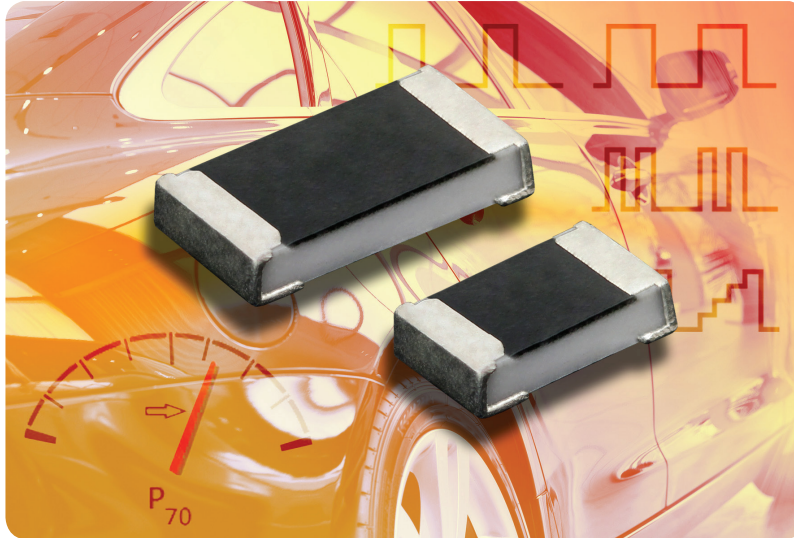


Anti-Surge, High-Power Thick Film Chip Resistors



KEY BENEFITS

- Excellent surge pulse capability
- Superior ESD surge characteristics
- High power rating
- AEC-Q200 qualified

APPLICATIONS

- Automotive
- Industrial

RESOURCES

- Datasheet: RCS e3 - www.vishay.com/doc?20065
- For technical questions contact thickfilmchip@vishay.com
- Material categorization: For definitions please see www.vishay.com/doc?99912



THICK FILM CHIP RESISTORS

RCS e3

Anti-Surge, High-Power Thick Film Chip Resistors

| TECHNICAL SPECIFICATIONS | | | |
|--|----------------------------|------------|------------|
| DESCRIPTION | RCS0402 e3 | RCS0603 e3 | RCS0805 e3 |
| Imperial size | 0402 | 0603 | 0805 |
| Metric size code | RR1005M | RR1608M | RR2012M |
| Resistance range | 1 Ω to 10 MΩ; jumper (0 Ω) | | |
| Resistance tolerance | ± 5 %; ± 1 %; ± 0.5 % | | |
| Temperature coefficient | ± 200 ppm/K; ± 100 ppm/K | | |
| Rated dissipation, P_{70} ⁽¹⁾ | 0.2 W | 0.25 W | 0.4 W |
| Operating voltage, U_{max} AC _{RMS} /DC | 50 V | 75 V | 150 V |
| Permissible film temperature, ϑ_F max. ⁽¹⁾ | 155 °C | | |
| Operating temperature range | -55 °C to +155 °C | | |
| Max. resistance change at P_{70} for resistance range, $ \Delta R/R $ after: | | | |
| | 1000 h | ≤ 1.0 % | |
| | 8000 h | ≤ 2.0 % | |
| Permissible voltage against ambient (insulation): | | | |
| | 1 min, U_{ins} | 75 V | 100 V |
| | | 100 V | 200 V |

| TEMPERATURE COEFFICIENT AND RESISTANCE RANGE | | | | |
|--|---------------------------|-----------|--------------|----------|
| TYPE / SIZE | TCR | TOLERANCE | RESISTANCE | E-SERIES |
| RCS0402 e3 | ± 200 ppm/K | ± 5 % | 1 Ω to 10 MΩ | E24 |
| | ± 100 ppm/K | ± 1 % | 1 Ω to 10 MΩ | E24; E96 |
| | ± 100 ppm/K | ± 0.5 % | 1 Ω to 10 MΩ | E24; E96 |
| | Jumper, $I_{max} = 3$ A | ≤ 20 mΩ | 0 Ω | - |
| RCS0603 e3 | ± 200 ppm/K | ± 5 % | 1 Ω to 10 MΩ | E24 |
| | ± 100 ppm/K | ± 1 % | 1 Ω to 10 MΩ | E24; E96 |
| | ± 100 ppm/K | ± 0.5 % | 1 Ω to 10 MΩ | E24; E96 |
| | Jumper, $I_{max} = 3.5$ A | ≤ 20 mΩ | 0 Ω | - |
| RCS0805 e3 | ± 200 ppm/K | ± 5 % | 1 Ω to 10 MΩ | E24 |
| | ± 100 ppm/K | ± 1 % | 1 Ω to 10 MΩ | E24; E96 |
| | ± 100 ppm/K | ± 0.5 % | 1 Ω to 10 MΩ | E24; E96 |
| | Jumper, $I_{max} = 4$ A | ≤ 20 mΩ | 0 Ω | - |

Note

- The temperature coefficient of resistance (TCR) is not specified for 0 Ω jumpers.

| PACKAGING | | | | | | |
|-------------|----------|----------|--|-------|--------------|----------------------|
| TYPE / SIZE | CODE | QUANTITY | PACKAGING STYLE | WIDTH | PITCH | PACKAGING DIMENSIONS |
| RCS0402 e3 | ED = ET7 | 10 000 | Paper tape according to IEC 60286-3, Type 1a | 8 mm | 2 mm | ∅ 180 mm/7" |
| | EE = EF4 | 50 000 | | | | ∅ 330 mm/13" |
| RCS0603 e3 | EI = ET2 | 5000 | | | 2 mm | ∅ 180 mm/7" |
| | ED = ET3 | 10 000 | | | | ∅ 180 mm/7" |
| | EL = ET4 | 20 000 | | | | ∅ 285 mm/11.25" |
| | EE = ET8 | 50 000 | | | | ∅ 330 mm/13" |
| | EA = ET1 | 5000 | | | | ∅ 180 mm/7" |
| | EB = ET5 | 10 000 | | | | ∅ 285 mm/11.25" |
| RCS0805 e3 | EC = ET6 | 20 000 | | | 4 mm | ∅ 330 mm/13" |
| | EA = ET1 | 5000 | | | | ∅ 180 mm/7" |
| | EB = ET5 | 10 000 | ∅ 285 mm/11.25" | | | |
| | EC = ET6 | 20 000 | | | ∅ 330 mm/13" | |

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