

Thickfilm Resistor

CS 005 / CS 005L / CS 005C

► Resistance ranges, tolerances and TC's

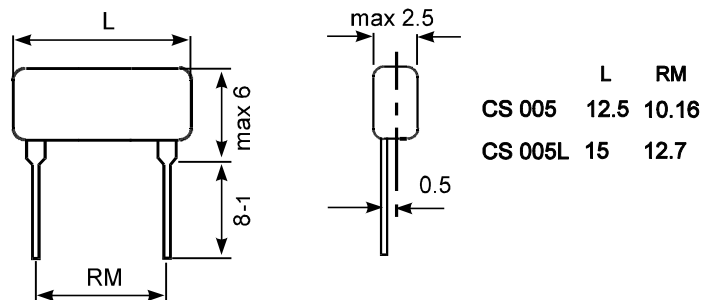
| Tolerance | ± 1% | ± 2% | ± 5% | ± 10% |
|-------------------|-----------|-------------|--------------|-------------|
| Resistance ranges | 10K - 22M | >22M - 200M | >200M - 500M | >500M - 10G |

All values within the resistance range are available.
Lower tolerance-values upon request.

► Ratings by IEC 60115-1

| | | |
|-----------------------------|------------------------------------|--|
| Thermal resistance R_{th} | | max. 140 K/W |
| Limited element voltage | | ≅ 750 V |
| Rated dissipation | P_{70} ($\vartheta_o = 125$ °C) | 0.4 W |
| | P_{40} ($\vartheta_o = 125$ °C) | 0.6 W |
| Climatic category | | 55 / 125 / 56 |
| Insulation voltage | | > 500 V |
| Insulation resistance | | > 10^{10} Ω |
| Temp. characteristics | ≤ 250M | ± $100 \times 10^{-6} / ^\circ\text{C}$ |
| | > 250M | ± $250 \times 10^{-6} / ^\circ\text{C}$ |
| Voltage coefficient | | < $5 \times 10^{-6} / \text{V}$ |
| Weight (100 pcs.) | | ca. 25 g |
| Marking | | letter |
| Cleaning solvents | | For the removal of flux can be used: ethanol, methanol, isopropanol, propanol, butanol and water; reaction time max. 5 minutes |

► Dimensions CS 005 / CS 005L



► Tests

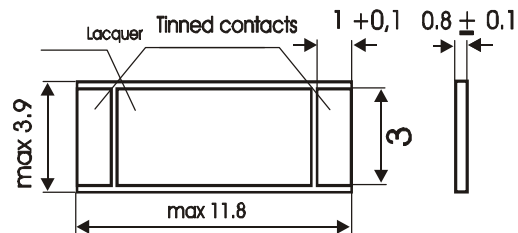
| | Test | Conditions | Requirements |
|------|------------------------------|---|-------------------------------|
| 4.13 | Overload | 5 s, $2,5 \times U_{rat}$ or $2 \times U_{max}$ | $\Delta R \leq \pm (0.10\%R)$ |
| 4.18 | Soldering-Resistance to heat | 260 ± 5 °C, 10 s | $\Delta R \leq \pm (0.10\%R)$ |
| 4.19 | Rapid change of temp. | -65 °C, 155 °C, 5x | $\Delta R \leq \pm (0.25\%R)$ |
| 4.24 | Damp heat, steady | 40 °C, 93% r.H., 56 d | $\Delta R \leq \pm (0.25\%R)$ |
| 4.25 | Endurance at 70 °C | U_{rat} or U_{max} 1000 h | $\Delta R \leq \pm (0.25\%R)$ |
| | | U_{rat} or U_{max} 8000 h | $\Delta R \leq \pm (0.50\%R)$ |

Section numbers of test and performance requirements refer to IEC 60115-1.

Thickfilm Resistor

CS 005 / CS 005L / CS 005C

► Dimensions CS 005C



► Ratings by IEC 60115-1

| | |
|-------------------------|-----------|
| Voltage against ambient | 75 V |
| Mounting | Face down |
| Weight (100 pcs) | ca. 22 g |

► Tests

| | Test | Conditions | Requirements |
|------|--|--|-------------------------------|
| 4.13 | Overload | 5 s, $2,5 \times U_{\text{rat}}$ or $2 \times U_{\text{max}}$ | $\Delta R \leq \pm (0.10\%R)$ |
| 4.18 | Soldering-Resistance to heat | $260 \pm 5 \text{ }^\circ\text{C}$, 10 s | $\Delta R \leq \pm (0.10\%R)$ |
| 4.19 | Rapid change of temp. | $-65 \text{ }^\circ\text{C}$, $155 \text{ }^\circ\text{C}$, 5x | $\Delta R \leq \pm (0.25\%R)$ |
| 4.31 | Substrat bending test | 10x, 1mm | $\Delta R \leq \pm (0.10\%R)$ |
| 4.25 | Endurance at $70 \text{ }^\circ\text{C}$ | U_{rat} or U_{max} 1000 h | $\Delta R \leq \pm (0.50\%R)$ |
| | | U_{rat} or U_{max} 8000 h | $\Delta R \leq \pm (1.00\%R)$ |

Section numbers of test and performance requirements refer to IEC 60115-1.

► Order examples

CS 005 200M 2%

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type rated resistance tolerance

CS 005C/L 100M 2%

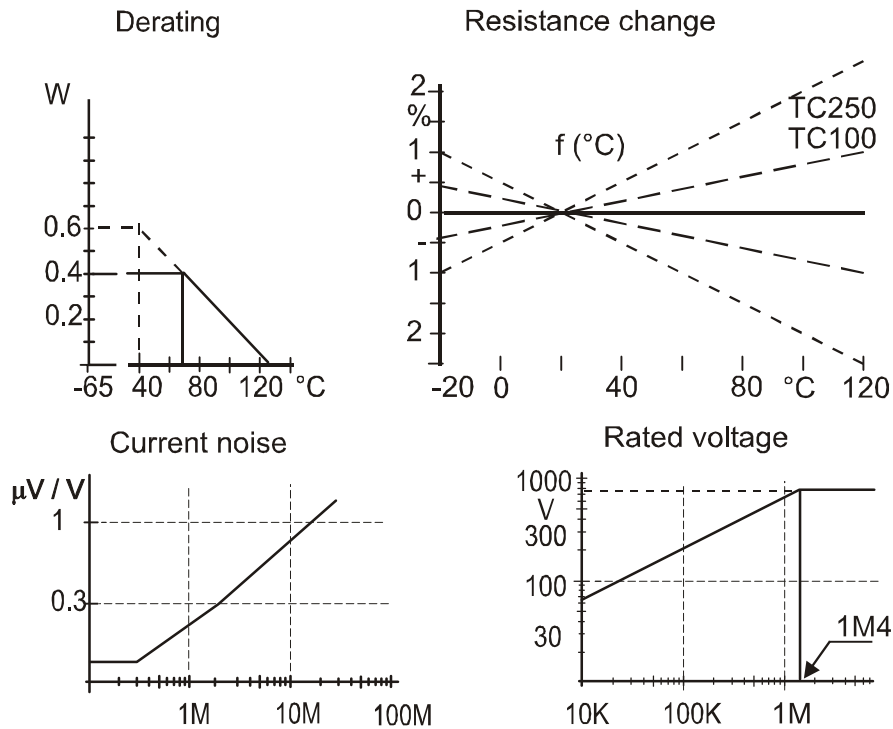
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type rated resistance tolerance

Thickfilm Resistor

CS 005 / CS 005L / CS 005C

► Rating curves



► Values on stock (delivery max. 5 days)

| | | | | | | | |
|-----|----|-----|----|------|-----|-----|-----|
| 1M | 1% | 10M | 1% | 100M | 2% | 1G | 10% |
| 1M2 | 1% | 12M | 1% | 120M | 2% | | |
| 1M5 | 1% | 15M | 1% | 150M | 2% | | |
| 1M8 | 1% | 18M | 1% | 180M | 2% | | |
| 2M | 1% | 20M | 1% | 200M | 2% | 2G | 10% |
| 2M2 | 1% | 22M | 1% | 220M | 5% | | |
| 2M7 | 1% | 27M | 2% | 270M | 5% | | |
| 3M | 1% | 30M | 2% | 300M | 5% | 3G | 10% |
| 4M | 1% | 40M | 2% | 400M | 5% | 4G | 10% |
| 4M7 | 1% | 47M | 2% | 470M | 5% | | |
| 5M | 1% | 50M | 2% | 500M | 5% | 5G | 10% |
| 5M6 | 1% | 56M | 2% | 560M | 10% | | |
| 6M8 | 1% | 68M | 2% | 680M | 10% | | |
| 8M2 | 1% | 82M | 2% | 820M | 10% | 10G | 10% |