

CSR Series

Power Current Sense Chip Resistor



Not recommended for new designs. EOL 06/09/2021, LTB 01/31/2022.
Please see our [CSRL](#) series for alternates.



- Resistances from 0.5 mOhm to 100 mOhm
- Power Rating up to 3 Watts
- Resistance Tolerances to $\pm 0.5\%$
- TCR's to ± 50 ppm/ $^{\circ}\text{C}$
- Sizes: 1206 / 2010 / 2512
- Non-Inductive Metal Element ($< 5\text{nH}$)

SPECIFICATIONS

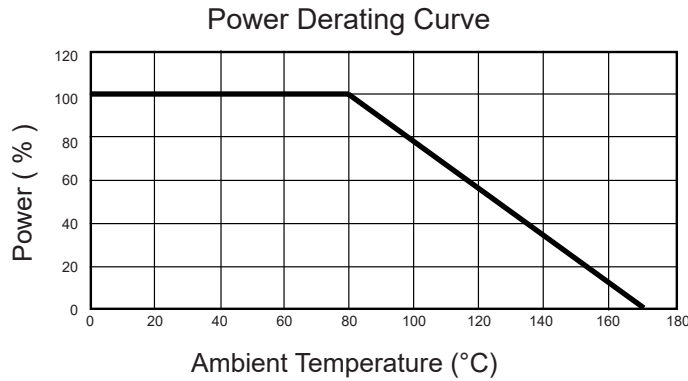
| Type | Power Rating (W) at 80°C | Resistances (m Ω) | TCR (ppm/ $^{\circ}\text{C}$) | Tolerances | Operating Temperature Range | MAX Operating Voltage |
|------------------------|----------------------------|--|--|---------------------------------------|-----------------------------|-----------------------|
| CSR1206 ⁽¹⁾ | 1 | 0.5 - 10 | ± 50 ± 200 (0.5m Ω) | 0.5% ⁽²⁾ 1% 3% 5% | -55°C to +170°C | $\sqrt{(P \cdot R)}$ |
| CSR2010 ⁽¹⁾ | 1.5 | 0.5 - 10 | ± 50 ± 100 (0.5m Ω) | | | |
| CSR2512 | 1 | 0.5, 0.75, 1, 1.5, 2 | ± 50 | | | |
| | | 15 - 100 | | | | |
| | | 6, 6.5, 7, 10, 11, 12, 13, 14 | ± 75 | | | |
| | | 4, 5, 10 | ± 100 | | | |
| | | 2.5, 3 | ± 150 | | | |
| CSR2512A | 2 | 0.5, 0.75, 1, 1.5, 2, 6.5, 7, 8, 9, 10, 15 - 100 | ± 50 | | | |
| | | 6, 6.5, 7, 10, 11, 12, 13, 14 | | | | |
| | | 4, 5, 10 | ± 100 | | | |
| | | 2.5, 3 | ± 150 | | | |
| | | CSR2512B | 2.5 | | | |
| CSR2512C | 3 | 0.5, 0.75 | ± 100 | | | |
| | | 10 - 14 | ± 75 | | | |
| | | 1, 1.5, 2, 3, 15 - 100 | ± 50 | | | |
| | | | | | | |

¹ The resistance value on 1206 and 2010 packages are unmarked

² 0.5% applies to 15m Ω and above

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Specifications

| Test | | Test Method |
|---|--|---|
| Temperature Coefficient of Resistance | As Specified | +25/-55/+25/+125/+25°C |
| Short Time Overload | ±1.0% | 5x rated power for 5 seconds |
| Load Life | ±1.0% | 70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Dry Heat | ±1.0% | at +170°C for 1000 hrs |
| Solderability Terminal Finish = Nickel Tin | 95% min. coverage | 245±5°C for 3 seconds |
| Resistance to Soldering Heat | ±0.5% | 260±5°C for 10 seconds |
| Thermal Shock | ±0.5% | -55°C ~ 150°C, 100 cycles |
| Resistance Elements | 0.5mOHM to 3mOHM Manganese, Copper 3.5mOHM to 10mOHM Aluminum, Iron, Chromium | |

| Reel Sizes | Type | Quantity |
|------------|---------------|----------|
| CSR1206 | Embossed Tape | 2000 |
| CSR2010 | | |
| CSR2512* | | |

*10 mΩ & above is 4Kpc/T&R

Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR

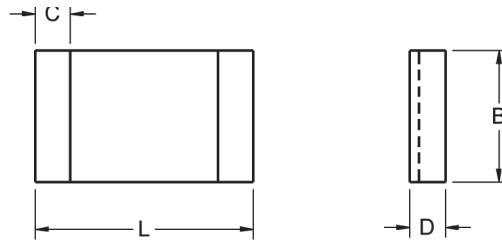
Example: CSR2512 1mOhm 1% 50ppm

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Specifications



| Part | Power Rating | Resistance Value | L (mm) | B (mm) | D (mm) | C (mm) |
|---------------------------------|--------------|------------------|------------|------------|-----------|-----------|
| CSR1206 | 1 | 0.5 | 3.20±0.25 | 1.60±0.10 | 0.60±0.20 | 1.35±0.25 |
| CSR1206 | 1 | 0.75 | 3.20±0.25 | 1.60±0.10 | 0.60±0.20 | 1.23±0.25 |
| CSR1206 | 1 | 1, 4, 5, 6 | 3.20±0.25 | 1.60±0.10 | 0.60±0.20 | 1.10±0.25 |
| CSR1206 | 1 | 2, 3, 10 | 3.20±0.25 | 1.60±0.10 | 0.60±0.20 | 0.60±0.25 |
| CSR1206 | 1 | 7, 8, 9 | 3.20±0.25 | 1.60±0.10 | 0.60±0.20 | 0.90±0.25 |
| CSR2010 | 1.5 | 0.5 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 2.17±0.25 |
| CSR2010 | 1.5 | 0.75 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 2.04±0.25 |
| CSR2010 | 1.5 | 1 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 1.84±0.25 |
| CSR2010 | 1.5 | 2, 6, 7, 8 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 1.54±0.25 |
| CSR2010 | 1.5 | 3 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 1.04±0.25 |
| CSR2010 | 1.5 | 4, 5 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 1.84±0.25 |
| CSR2010 | 1.5 | 9, 10 | 5.08±0.25 | 2.54±0.15 | 0.60±0.20 | 1.29±0.25 |
| CSR2512 | 1 | 0.5 | 6.35±0.254 | 3.18±0.254 | 1.25±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 0.75 | 6.35±0.254 | 3.18±0.254 | 0.75±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 1 | 6.35±0.254 | 3.18±0.254 | 0.65±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 1.5 | 6.35±0.254 | 3.18±0.254 | 0.45±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 2 | 6.35±0.254 | 3.18±0.254 | 0.35±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 2.5 | 6.35±0.254 | 3.18±0.254 | 0.65±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 3 | 6.35±0.254 | 3.18±0.254 | 0.55±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 4 | 6.35±0.254 | 3.18±0.254 | 0.45±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 5 | 6.35±0.254 | 3.18±0.254 | 0.35±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 6 | 6.35±0.254 | 3.18±0.254 | 0.32±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 6.5 | 6.35±0.254 | 3.18±0.254 | 0.30±0.20 | 1.30±0.38 |
| CSR2512 | 1 | 7 | 6.35±0.254 | 3.18±0.254 | 0.27±0.20 | 1.30±0.38 |
| CSR2512 CSR2512A CSR2512C | 1 to 3 | 10 - 100 | 6.40±0.25 | 3.20±0.25 | 0.70±0.20 | 0.90±0.30 |
| CSR2512 w/ Green Coating | 1 to 3 | 0.5 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 2.68±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 0.75 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 2.48±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 1, 5, 6 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 1.93±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 1.5, 6.5, 7 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 1.43±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 2, 3 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 1.18±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 4, 4.5 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 2.18±0.25 |
| CSR2512 w/ Green Coating | 1 to 3 | 8 to 15 | 6.35±0.25 | 3.00±0.20 | 0.60±0.20 | 1.18±0.25 |