

# CSR Series

Power Current Sense Chip Resistor



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

## SPECIFICATIONS

Type	Power Rating (W) at 80°C	Resistances (mΩ)	TCR (ppm/ $^{\circ}\text{C}$ )	Tolerances	Operating Temperature Range	MAX Operating Voltage
CSR1206	1	0.5 - 10	$\pm 50$ $\pm 200$ (0.5mΩ)	0.5% <sup>(3)</sup> 1% 3% 5%	-55°C to +170°C	$\sqrt{P \cdot R}$
CSR2010	1.5	0.5 - 10	$\pm 50$ $\pm 100$ (0.5mΩ)			
CSR2512	1	0.5, 0.75, 1, 1.5, 2	$\pm 50$			
		15 - 100				
		6, 6.5, 7, 10, 11, 12, 13, 14	$\pm 75$			
		4, 5, 10	$\pm 100$			
CSR2512A <sup>1</sup>	2	0.5, 0.75, 1, 1.5, 2	$\pm 50$			
		6.5, 7, 8, 9, 10, 15 - 100				
		6, 6.5, 7, 10, 11, 12, 13, 14	$\pm 75$			
		4, 5, 10	$\pm 100$			
		2.5, 3	$\pm 150$			
CSR2512B <sup>2</sup>	2.5	4, 4.5, 5, 6	$\pm 50$			
CSR2512C <sup>2</sup>	3	0.5, 0.75	$\pm 100$			
		10 - 14	$\pm 75$			
		1, 1.5, 2, 3,	$\pm 50$			
		15 - 100				

<sup>1</sup> 6.5, 7, 8, 9 mΩ at 50ppm have green coating

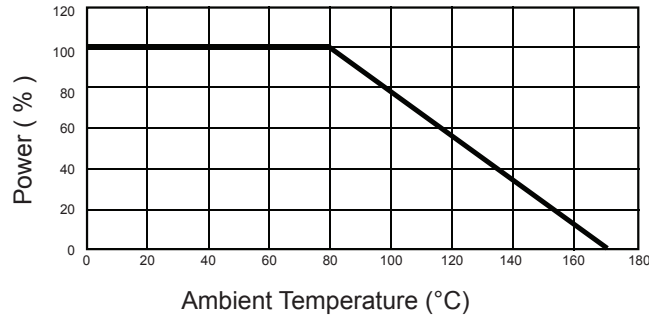
<sup>2</sup> All values under 10 mΩ have green coating

<sup>3</sup> 0.5% applies to 15mΩ and above



## Specifications

Power Derating Curve



Test	Specification		Test Method
	Black Coating	Green Coating	
Temperature Coefficient of Resistance	As Spec.		+25/-55/+25/+125/+25°C
Short Time Overload	±1.0%	±1.0%	5x rated power for 5 seconds
Load Life	±1.0%	±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%	±1.0%	at +170°C for 1000 hrs
Solderability	95% min. coverage		245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	±1.0%	260±5°C for 10 seconds
Thermal Shock	±0.5%	±(0.5%+0.05Ω)	-55°C ~ 150°C, 100 cycles

\*Green Coating can't be used in solder bath

Reel Sizes	Type	Quantity
CSR1206	Embossed Tape	2000
CSR2010		
CSR2512*		

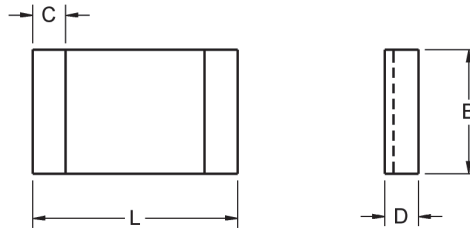
\*10 mΩ & above is 4Kpc/T&R

## Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR

Example: CSR2512 1mOhm 1% 50ppm

## 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