

CSRL Series

Power Metal Element Current Sense Chip Resistor



- Resistances from 0.5 mOhm to 200 mOhm
- Power Rating up to 3 Watts
- Resistance Tolerances to $\pm 0.5\%$
- TCR's to ± 50 ppm/ $^{\circ}\text{C}$
- Sizes: 1206 & 2512
- Non-Inductive Metal Element ($< 5\text{nH}$)

Electrical Specifications

Type	Power Rating (W) at 70°C	Resistances (mΩ) *	TCR (ppm/°C)	Available Tolerances	Operating Temperature Range	MAX Operating Voltage
CSRL1 (1206)	1	8, 10, 12, 15, 20	±100	0.5%, 1%, 5%	-55°C to +170°C	√(P*R)
CSRL3 (2512)	3	0.5, 0.75, 1, 1.5, 2	±50	1%, 5%		
		3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 180, 200	±75	0.5%, 1%, 5%		
		15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 180, 200	±50			

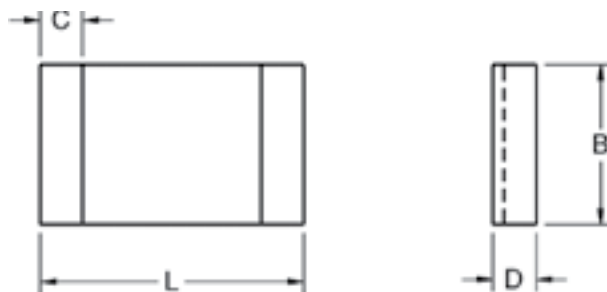
* Other resistance values may be available, please consult factory

Environmental Specifications

Test		Test Method
Temperature Coefficient of Resistance	As Specified	+25/-55/+25/+125/+25°C
Short Time Overload	$\pm 1.0\%$	5x rated power for 5 seconds
Load Life	$\pm 1.0\%$	70 $\pm 2^{\circ}\text{C}$, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	$\pm 1.0\%$	at +170°C for 1000 hrs
Solderability Terminal Finish = Nickel Tin	95% min. coverage	245 $\pm 5^{\circ}\text{C}$ for 3 seconds
Resistance to Soldering Heat	$\pm 0.5\%$	260 $\pm 5^{\circ}\text{C}$ for 10 seconds
Thermal Shock	$\pm 1.0\%$	-55°C ~ 155°C, 5 cycles

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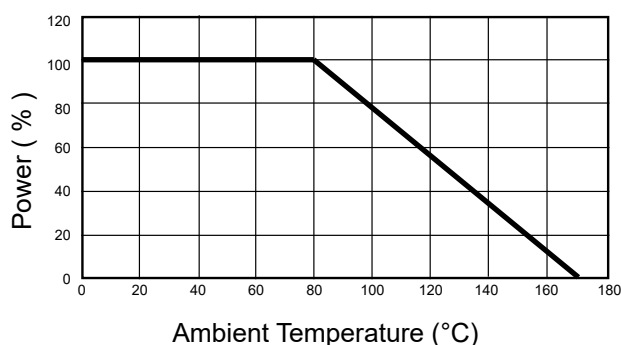


Dimensions

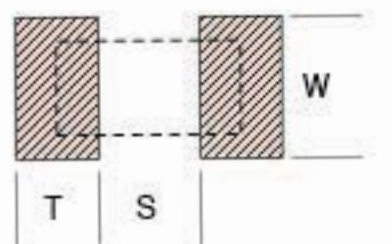
Type	Resistance Value (mΩ)	Resistor Body				Recommended Land Pattern FR4 copper board, 100μm of copper pad thickness			Mass * (g/1000)
		L (mm)	B (mm)	C (mm)	D (mm)	S (mm)	T (mm)	W (mm)	
CSRL1	8 - 20	3.10±0.10	1.60±0.10	0.45±0.15	0.60±0.10	1.50	1.40	1.70	9.06
CSRL3	0.5	6.35±0.254	3.18±0.254	1.30±0.38	1.25±0.20	2.95	2.70	3.60	184.11
	0.75	6.35±0.254	3.18±0.254	1.30±0.38	0.75±0.20	2.95	2.70	3.60	131.11
	1	6.35±0.254	3.18±0.254	1.30±0.38	0.65±0.20	2.95	2.70	3.60	110.85
	1.5	6.35±0.254	3.18±0.254	1.30±0.38	0.45±0.20	2.95	2.70	3.60	67.16
	2	6.35±0.254	3.18±0.254	1.30±0.38	0.35±0.20	2.95	2.70	3.60	49.30
	3 - 200	6.40±0.25	3.20±0.25	0.90±0.30	0.70±0.20	4.00	2.00	3.50	40.20

*CSRL1, 5000 per reel | CSRL3 ≤ 0.003Ω, 2000 per reel, all other values, 4000 per reel

Power Derating Curve



Landing Pattern



Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR

Example: CSRL3 0.001 OHM 1% 50ppm