

# CSR/CSRN Series — Thick Film Current Sensing Resistors



## Features

- 0402 to 2512 & 1225 sizes available
- Power ratings to 3W
- Low inductance – less than 0.2nH typically
- Non-standard resistance values available
- RoHS compliant

## Electrical Specifications

Type / Code	Package Type	Power Rating (Watts) @ 70°C	Dielectric Withstanding Voltage	Resistance Temperature Coefficient	Ohmic Range and Tolerance	
					1%	5%
CSR 1/8S	0402	0.063W(0.125W)**	200V	±200 ppm/°C	0.051Ω – 1.000Ω	0.051Ω – 1.000Ω
CSR 1/8	0603	0.010W (0.125W)**	200V	±300 ppm/°C	0.021Ω – 1.000Ω	0.021Ω – 1.000Ω
CSR 1/4	0805	0.125W (0.250W)**	200V	±200 ppm/°C	0.010Ω – 1.000Ω	0.021Ω – 1.000Ω
CSR 1/2	1206	0.250W (0.500W)**	200V	±100 ppm/°C *	0.010Ω – 1.000Ω	0.010Ω – 1.000Ω
CSRN 1S	0815	1.000W	200V	±300 ppm/°C ±150 ppm/°C	0.010Ω – 0.019Ω 0.020Ω – 0.500Ω	0.010Ω – 0.019Ω 0.020Ω – 0.500Ω
CSR 1	2010	0.750W (1.000W)**	200V	±100 ppm/°C *	0.010Ω – 1.000Ω	0.010Ω – 1.000Ω
CSRN 1	2010	0.750W (1.000W)**	200V	±250 ppm/°C	0.010Ω – 1.000Ω	0.010Ω – 1.000Ω
CSR 2	2512	1.000W (2.000W)**	200V	±200 ppm/°C	0.010Ω – 1.000Ω	0.010Ω – 1.000Ω
CSRN 2	2512	1.000W (2.000W)**	200V	±200 ppm/°C	0.010Ω – 1.000Ω	0.010Ω – 1.000Ω
CSR 3	1225	3.000W	200V	±200 ppm/°C ±150 ppm/°C	0.003Ω – 0.020Ω 0.021Ω – 3.000Ω	0.003Ω – 0.020Ω 0.021Ω – 3.000Ω

\* Contact factory for TCR on values below 0.05Ω

\*\* Higher power rating for each package size is valid if ambient temp <= 80°C and terminal temp <= 105°C

## Performance Characteristics

Test	Test Specification	Typical
Moisture Resistance	±0.5%	≤0.5%
Load Life	±0.5%	≤0.5%
Leach Resistance	90 seconds min	>90 seconds
Resistance to Soldering Heat	±0.5%	≤0.25%
Solderability	min 95% coverage	≥95%
Temperature Cycling	±0.5%	≤0.5%
Thermal Shock	±0.5%	≤0.5%
Short Time Overload	±0.5%	≤0.5%
Insulation Resistance	1MΩ minimum	≥1MΩ

Operating Temperature Range : -55°C to +155°C

## How to Order

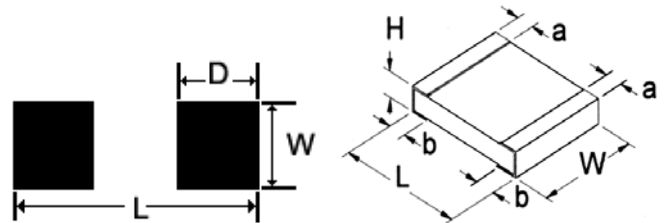
CSR		1/2		0.01		1%		R	
SEI Type		Code		Nominal Resistance		Tolerance		Packaging	
<b>Type</b>	<b>Description</b>	<b>Code</b>	<b>Wattage</b>	<b>Size</b>	<b>Tolerance</b>	<b>SEI Types</b>	<b>Pkg Qty</b>	<b>Description</b>	<b>Code</b>
CSR	Standard RoHS	1/8S	0.125W	0402	1%	1/8S	10,000	7" reel	R
CSRN	Narrow Terminations RoHS	1/8	0.125W	0603	5%	1/8, 1/4, 1/2	5,000		
		1/4	0.250W	0805		1, 2	4,000		
		1/2	0.500W	1206		1S, 3	2,000		
		1S	1.000W	0815		ALL	1,000		
		1	1.000W	2010		1, 2	5,000	13" reel	G
		2	2.000W	2512					
		3	3.000W	1225					

## Mechanical Specifications

Type / Code	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Units
CSR 1/8S	0.039 ± 0.004 0.991 ± 0.102	0.020 ± 0.004 0.508 ± 0.102	0.014 ± 0.004 0.35 ± 0.102	0.006 ± 0.004 0.152 ± 0.102	0.006 ± 0.004 0.152 ± 0.102	inches mm
CSR 1/8	0.063 ± 0.004 1.600 ± 0.102	0.032 ± 0.004 0.813 ± 0.102	0.018 ± 0.004 0.457 ± 0.102	0.012 ± 0.008 0.305 ± 0.203	0.012 ± 0.008 0.305 ± 0.203	inches mm
CSR 1/4	0.079 ± 0.008 2.006 ± 0.203	0.049 ± 0.008 1.245 ± 0.203	0.016 ± 0.004 0.406 ± 0.102	0.016 ± 0.008 0.406 ± 0.203	0.016 ± 0.008 0.406 ± 0.203	inches mm
CSR 1/2	0.120 ± 0.006 3.048 ± 0.152	0.063 ± 0.008 1.600 ± 0.203	0.020 ± 0.006 0.508 ± 0.152	0.020 ± 0.012 0.510 ± 0.304	0.016 ± 0.010 0.406 ± 0.254	inches mm
CSRN 1S	0.079 ± 0.008 2.000 ± 0.200	0.148 ± 0.008 3.750 ± 0.200	0.024 ± 0.004 0.610 ± 0.102	0.016 ± 0.008 0.400 ± 0.200	0.016 ± 0.008 0.400 ± 0.200	inches mm
CSR 1	0.197 ± 0.008 5.003 ± 0.203	0.100 ± 0.008 2.540 ± 0.203	0.020 ± 0.006 0.508 ± 0.152	0.067 ± 0.006 1.702 ± 0.152	0.067 ± 0.006 1.702 ± 0.152	inches mm
CSRN 1	0.197 ± 0.006 5.004 ± 0.152	0.100 ± 0.006 2.540 ± 0.152	0.024 ± 0.004 0.610 ± 0.102	0.024 ± 0.012 0.610 ± 0.305	0.020 ± 0.010 0.508 ± 0.254	inches mm
CSR 2	0.252 ± 0.008 6.401 ± 0.203	0.126 ± 0.008 3.200 ± 0.203	0.020 ± 0.006 0.508 ± 0.152	0.075 ± 0.006 1.905 ± 0.152	0.075 ± 0.006 1.905 ± 0.152	inches mm
CSRN 2	0.246 ± 0.006 6.248 ± 0.152	0.121 ± 0.006 3.073 ± 0.152	0.023 ± .004 0.584 ± 0.102	0.023 ± 0.012 0.584 ± 0.305	0.020 ± 0.010 0.508 ± 0.254	inches mm
CSR 3	0.125 ± 0.005 3.180 ± 0.127	0.250 ± 0.005 6.350 ± 0.127	0.030 ± 0.005 0.900 ± 0.127	0.023 ± 0.012 0.584 ± 0.305	0.020 ± 0.010 0.508 ± 0.254	inches mm

## Solder Pad Dimensions

Type / Code	L Total Length	W Total Width	D Pad Depth	Units
CSR 1/8S	0.060 1.50	0.024 0.60	0.020 0.50	inches mm
CSR 1/8	0.091 2.30	0.039 1.00	0.030 0.75	inches mm
CSR 1/4	0.102 2.60	0.059 1.50	0.032 0.8	inches mm
CSR 1/2	0.150 3.80	0.075 1.90	0.035 0.90	inches mm
CSRN 1S	0.114 2.90	0.177 4.50	0.037 0.95	inches mm
CSR 1	0.228 5.80	0.118 3.00	0.087 2.20	inches mm
CSRN 1	0.232 5.90	0.118 3.00	0.043 1.10	inches mm
CSR 2	0.287 7.30	0.158 4.00	0.098 2.50	inches mm
CSRN 2	0.291 7.40	0.158 4.00	0.047 1.20	inches mm
CSR 3	0.157 4.00	0.30 7.60	0.051 1.30	inches mm



### CSR3 (1225)

### 4 Terminal Bottom

