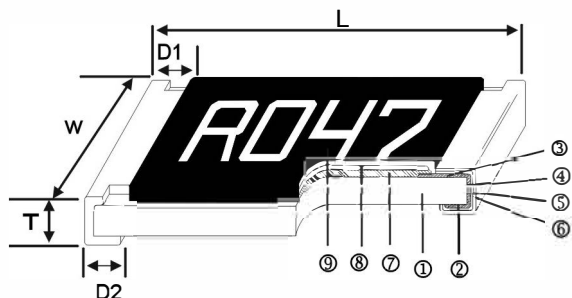


REZYSORY SMD CURRENT SENSE (SERIA CS) CURRENT SENSE CHIP RESISRORS (CS SERIES)

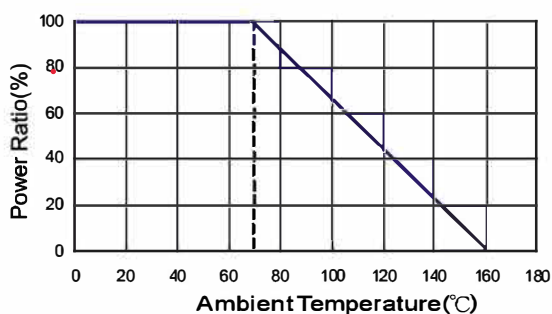
Construction



Dimensions

Type	Size (Inch)	L	W	T	D1	D2
CS01	0201	0.60±0.03	0.30±0.03	0.23±0.05	0.12±0.05	0.15±0.05
CS02	0402	1.00±0.05	0.50±0.05	0.32±0.10	0.25±0.10	0.20±0.10
CS03	0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20
CS05	0805	2.00±0.10	1.25±0.10	0.55±0.10	0.30±0.20	0.40±0.25
CS06	1206	3.10±0.10	1.55±0.10	0.55±0.10	0.50±0.30	0.40±0.25
CS13	1210	3.10±0.10	2.60±0.15	0.55±0.10	0.50±0.30	0.50±0.25
CS10	2010	5.00±0.10	2.50±0.15	0.60±0.15	0.60±0.30	0.50±0.25
CS12	2512	6.35±0.10	3.10±0.15	0.60±0.10	0.60±0.30	0.55±0.25
CS12 (2W)	2512 (10 - 99mΩ)	6.35±0.20	3.15±0.15	0.74±0.10	0.60±0.30	0.55±0.25
CS12 (2W)	2512 (100 - 1000mΩ)	6.35±0.20	3.15±0.15	0.74±0.10	0.60±0.30	2.10±0.10
CS25	1225	3.10±0.15	6.30±0.15	0.90±0.15	0.60±0.30	0.80±0.25
CS37	3720	2.00±0.20	3.75±0.20	0.60±0.10	0.40±0.20	0.40±0.20
CS75	7520	2.00±0.20	7.50±0.30	0.60±0.10	0.40±0.20	0.40±0.20
CS62	0612	1.55±0.10	3.10±0.15	0.55±0.10	0.30±0.15	0.40±0.15

Derating Curve



Standard Electrical Specifications

Type	Item	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)			TCR (PPM/°C)
				±1%	±2%	±5%	
0201		1/20W	-55 ~ +155°C		100 - 149 150 - 500 501 - 1000	±1000 ±600 ±300	
0402		1/16W		50 - 100 101 - 500 501 - 1000	±400 ±300 ±200		
0603		1/10W		20 - 50 51 - 100 101 - 500 501 - 1000	±600 ±400 ±300 ±200		
0805		1/8W		20 - 50 51 - 100 101 - 196 200 - 1000	±600 ±400 ±300 ±200		
1206		1/4W		10 - 20	±600		
1210		1/2W		21 - 50	±400		
2010		3/4W		51 - 91	±300		
2512		1W		100 - 1000	±200		
1225		3W		3 - 5 6 - 20 21 - 30 33 - 8000	±300 ±200 ±150 ±100		
3720		1W		10 - 19 20 - 500	±300 ±150		
7520		2W		—	1 - 4	±300	
				5 - 10 11 - 350	±200 ±150		
0612		1W		10 - 27	±600		
				30 - 91	±300		
			100 - 1000	±200			

■ High Power & Ultra High Power Rating Electrical Specifications

Type \ Item	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)			TCR (PPM/°C)
			±1%	±2%	±5%	
0402	1/8W	-55 ~ +155°C	51 - 100			±400 ±300 ±200
0603	1/8W, 1/5W		101 - 500			
0805	1/4W		501 - 1000			
1206	1/2W		10 - 20			±600 ±400 ±300 ±200
1210	3/4W		21 - 50			
2010	1W		51 - 91			
2512	1.5W		100 - 1000			
2512	* 2W					

* : Ultra High Power

■ Low TCR Electrical Specifications

Type \ Item	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)			TCR (PPM/°C)
			±1%	±2%	±5%	
0805	1/8W	-55 ~ +155°C	100 - 1000			±100
1206	1/4W		100 - 1000			±100
1210	1/2W		75 - 1000			±100
2010	3/4W		50 - 1000			±100
2512	1W		20 - 1000			±100
2512	* 2W		50 - 1000			±100
3720	1W		100 - 500			±100
7520	2W		50 - 350			±100

* : Ultra High Power

Operating Voltage = $\sqrt{P \cdot R}$; Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$; Operating Current = $\sqrt{P/R}$

■ Thunder is capable of manufacturing the optional spec based on customer's requirement.

■ Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	JIS-C-5201-1 4.8 IEC-60115-1 4.8 -55°C~+125°C, 25°C is the reference temperature
Short Time Overload	±(0.5%+0.05Ω)	JIS-C-5201-1 4.13 IEC-60115-1 4.13 RCWV*2.5 or Max. overload voltage for 5 seconds
	±(1.0%+0.05Ω) for high power rating	
Insulation Resistance	≥10G	JIS-C-5201-1 4.6 IEC-60115-1 4.6 Max. overload voltage for 1 minute
Endurance	±(1.0%+0.05Ω)	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1 70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(0.5%+0.05Ω)	JIS-C-5201-1 4.24 40±2°C, 90~95% R.H., Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	±(0.5%+0.05Ω)	JIS-C-5201-1 4.23.2 IEC-60115-1 2.23.2 at +155°C for 1000 hrs
Bending Strength	As Spec.	JIS-C-5201-1 4.33 IEC-60115-1 4.33 Bending once for 5 seconds with 3mm 2010, 2512 sizes: 2 mm
Solderability	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17 245±5°C for 3 seconds
Resistance to Soldering Heat	±(0.5%+0.05Ω)	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260±5°C for 10 seconds
Voltage Proof	No breakdown or flashover	JIS-C-5201-1 4.7 IEC-60115-1 4.7 1.42 times RCWV (RMS) for 1 minute
Leaching	Individual leaching area ≤5% Total leaching area ≤10%	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1 260±5°C for 30 seconds
Rapid Change of Temperature	±(0.5%+0.05Ω)	JIS-C-5201-1 4.19 IEC-60115-1 4.19 -55°C to +155°C, 5 cycles

■ Storage Temperature: 25±3°C; Humidity < 80%RH