

# CLS Series

Current Sensing Chip Resistor

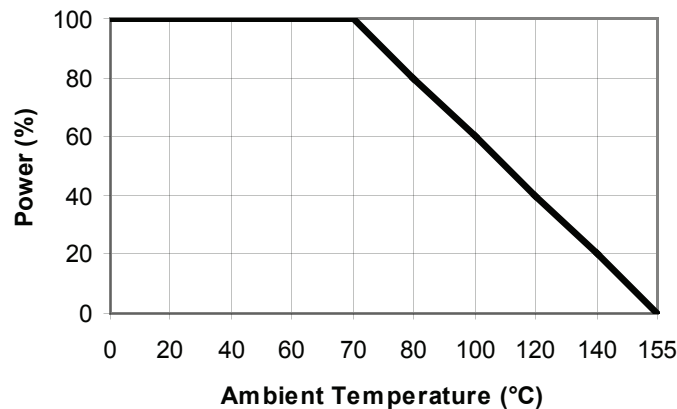


- Resistances from 0.01 to 10 Ohms
- Power Rating to 2 Watt
- Resistance Tolerances to  $\pm 1\%$
- TCR's to  $\pm 100$  ppm/ $^{\circ}\text{C}$
- Alumina Substrate for High Power Dissipation
- Sizes: 0402 / 0603 / 0805 / 1206 / 2010 / 2512

## SPECIFICATIONS

Type	CLS0402	CLS0603	CLS0805	CLS1206	CLS2010	CLS2512
Standard Power Rating (W)	0.0625	0.1	0.125	0.25	0.75	1.0
"High" Power Rating (W)	0.125	0.2	0.25	0.5	1.0	2.0
Standard Resistance Range ( $\Omega$ )	0.05 to 1.0	0.02 to 1.0		0.01 to 1.0		
"High" Resistance Range ( $\Omega$ )	0.051 to 1.0			0.01 to 1.0		
Temperature Coefficient (depending on ohmic value)	$\pm 200$ to $\pm 400$ ppm	$\pm 200$ to $\pm 600$ ppm $\pm 100$ ppm upon request				
"High" Temperature Coefficient (depending on ohmic value)	$\pm 200$ to $\pm 400$ ppm			$\pm 200$ to $\pm 600$ ppm $\pm 100$ ppm upon request		
Tolerances	1% / 2% / 5%					
Operating Temperature range	-55 to +155 $^{\circ}\text{C}$					
Dimensions (LxW) mm [inches]	1.00 x 0.50 [0.04 x 0.02]	1.60 x 0.80 [0.06 x 0.03]	2.00 x 1.25 [0.08 x 0.05]	3.10 x 1.55 [0.12 x 0.06]	5.00 x 2.50 [0.20 x 0.10]	6.30 x 3.10 [0.25 x 0.12]
Packaging (pcs) Tape and Reel	10,000	5,000			4,000	

Power Derating Curve



## Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR - Packaging - High/Standard Rating  
 Example: CLS 2512 0.500 Ohms 1% 100ppm HP

(Note: If no TCR is specified the highest value will be supplied. Standard Rating will be given if not specified)

# CLS Series

Current Sensing Chip Resistor



## Environmental Characteristics

Test	Requirement	Test Method
Temperature Coefficient of Resistance	As Spec.	-55C to 125°C, 25°C reference temperature
Short Time Overload	$\pm 0.5\% + 0.05\Omega$	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	$\geq 10G$	Max. overload voltage for 1 minute
Load Life	$\pm 1.0\% + 0.05\Omega$	70 $\pm$ 2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	$\pm 0.5\% + 0.05\Omega$	40 $\pm$ 2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	$\pm 0.5\% + 0.05\Omega$	at +155°C for 1000 hrs
Bending Strength	As Spec.	Bending once for 5 seconds 2010, 2512 sizes: 2mm Other sizes: 3mm
Solderability	95% min. coverage	245 $\pm$ 5°C for 3 seconds
Resistance to Soldering Heat	$\pm 0.5\% + 0.05\Omega$	260 $\pm$ 5°C for 10 seconds
Voltage Proof	No breakdown or flashover	1.42 times RCWV (RMS) for 1 minute
Leaching	Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$	260 $\pm$ 5°C for 30 seconds
Rapid Change of Temperature	$\pm 0.5\% + 0.05\Omega$	-55°C to +155°C, 5 cycles