



# CST Series Datasheet

SMD Power Shunt resistor  
Current Sensor Open Frame

## ORDERING CODE - Example

CST	272	F	K	-	13-	R001	AA
Type	Size	Tol.	Pack- Code	TC	Reel diam.	* R Value	
	121=1216 272=2725	F = ±1% H = ±3% J = ±5%	Blister tape	Base on spec.	07- inch 13- inch	L = mΩ	AA = Standard

\*0.2 mΩ to 5 mΩ there are 3~4 digits indicated the resistance value. Letter R/L is decimal point (L2 = 0.0002Ω, R001 = 1mΩ)

## APPLICATIONS



Automotive



Industrial



Power & Energy

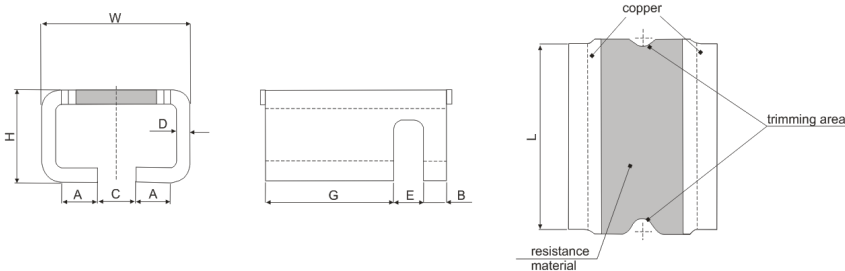
## FEATURES

- Suitable for automatic pick and place
- 4 – Terminals connection
- Excellent long-term stability
- AEC-Q200 qualified
- Suitable for mounting on DCB/IMS substrate
- RoHS & REACH Compliant

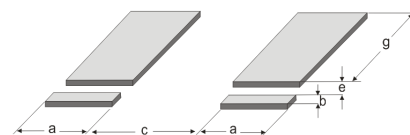
## ELECTRICAL SPECIFICATIONS

Type / Size		CST121	CST272
Nominal Power Rating (For details information check table below)	P <sub>70</sub>	Up to 7,0	Up to 12,0
	P <sub>100</sub>	Up to 5,0	Up to 5,0
Resistance Value (Preferred values)	[Ω]	R0005, R001	R0002, R0003, R0005, R0007, R001, R002, R003, R004, R005
Tolerances	±[%]	F = 1% ; H = 3% ; J = 5%	
Temperature Range	[°C]	-55 ... +170	-65 ... +170
Thermal Resistance	[KW <sup>-1</sup> ]	8      15	15
Temperature Coefficient	±[10 <sup>-6</sup> *K <sup>-1</sup> ]	<50	
Inductance	[nH]	< 2 (theoretical value)	< 3 (theoretical value)

## DIMENSIONS [mm]



### PCB Layout (Solder pad):



Type	L	H	W	A	C	G	B	E	D
CRS121	4,0 +0,1/-0,2	1,9 -0,35	3,1 -0,35	0,74 ±0,01	0,8 +0,3	2,8 ±0,1	0,5 ±0,1	0,6 +0,15	0,3 ±0,1
CRS272	6,6 +0,35/-0,2	3,6 +0/-1	6,9 ±0,2	1,4 ±0,2	3,1	4,9	0,8 -0,2	0,9 +0,2	0,4 ±0,1

Type	a	c	b	e	g
CRS121	1,15	0,6	0,7	0,5	2,95
CRS272	2,5	2,4	0,9	0,9	5,6

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## PERFORMANCE DATA

Temperature Cycling <i>IEC60115-1 clause 4.19 and IEC60068-2-14 (30 [min] -55 [°C] and 30 [min] +150 [°C], 2.000 [cycles])</i>	± [%]	0,5
Low Temperature Storage and Operation <i>IEC60115-1 clause 4.36 (250 [h] -65 [°C])</i>	± [%]	0,1
Resistance to soldering heat <i>IEC115-1 clause 4.18 (260<sup>±5</sup> [°C], 10[s], steam aging 8[h])</i>	± [%]	n.a.
Moisture resistance <i>Mil-STD-202, method 106</i>	± [%]	0,1
Mechanical Shock <i>Mil-STD-202 Method 213 (Method C, peak value 100 [g], 6[ms], Half sine)</i>	± [%]	0,2
Vibrations <i>Mil-STD-202 Method 204 (10 to 2000 [Hz], 10 [g], 24 [h] each axis)</i>	± [%]	0,2
Operational life <i>MIL-STD-202, method 108 CST1216 (t=130 [°C], 2.000[h, rated power]) CST2725 (t=140 [°C], 2.000[h, rated power])</i>	± [%]	1,0
High Temp. Exposure <i>MIL-STD-202 Method 108 (170[°C], 2.000 [h], unpowered)</i>	± [%]	1,0 (in covered condition for CuMn7Sn ; CuMn12Ni)
Biased Humidity <i>MIL-STD-202 Method 103 (85[°C], 85[%RH] 1.000[h])</i>	± [%]	0,5

## ELECTRICAL SPECIFICATIONS

Size	Value [mΩ]	Resistance values	Material	Power Rating		Resistive alloy TCR [ppm]
				P <sub>70</sub> [W]	P <sub>100</sub> [W]	
CST121	0.5	L5	Copper Manganese 38 Alloy	7	5	<±10
	1.0	R001	Copper Manganese 43 Alloy	4	3	

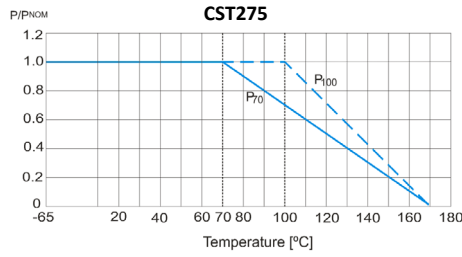
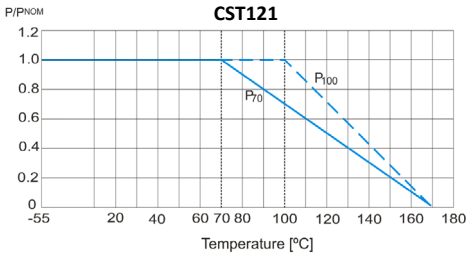
Size	Value [mΩ]	Resistance values	Material	Power Rating		Resistive alloy TCR [ppm]
				P <sub>70</sub> [W]	P <sub>100</sub> [W]	
CST272	0.2	L2	Copper Manganese MC2Alloy	12	5	<50
	0.3	L3	Copper Manganese 38 Alloy	10	5	
	0.5	L5	Copper Manganese 38 Alloy	9	5	
	0.7	L7	Copper Manganese 43 Alloy	8	4	
	1.0	R001	Copper Manganese 43 Alloy	7	4	<50
	2.0	R002	Aluchrom Alloy	7	4	
	3.0	R003	Aluchrom Alloy	5	3	
	4.0	R004	Aluchrom Alloy	4	2	
5.0	R005	Aluchrom Alloy	3	2		

**Note:** Please contact with sales offices, distributors and representatives in your region before ordering.

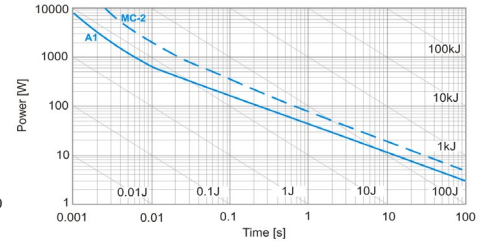
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## PERFORMANCE GRAPHS

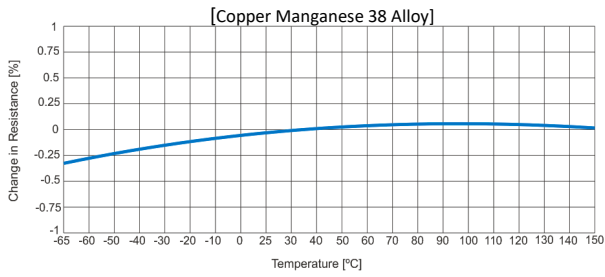
**Power Derating Curve**



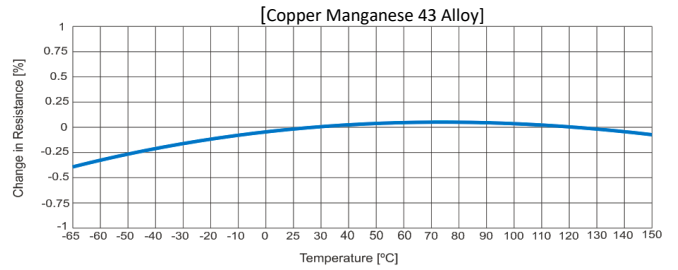
**Pulse Power Curve**



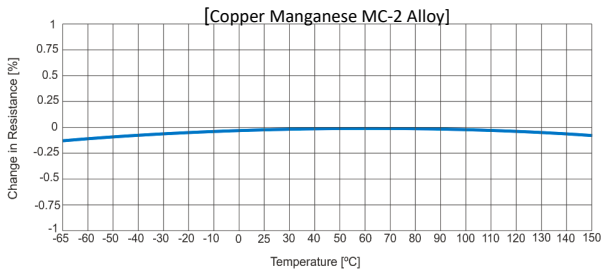
**Resistance Change vs Temperature**



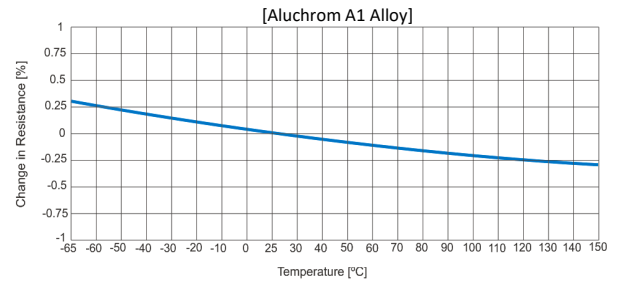
**Resistance Change vs Temperature**



**Resistance Change vs Temperature**

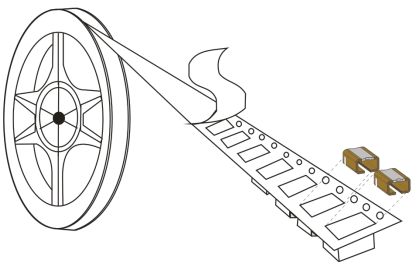


**Resistance Change vs Temperature**



## PACKAGING

The standard packaging for CST dimensions below:



Tape and reel information			
Specification : IEC60286-3			
Type	Tape width [mm]	Reel size [inch]	SPQ
CST121	12	07	3000
CST272	16	13	1400