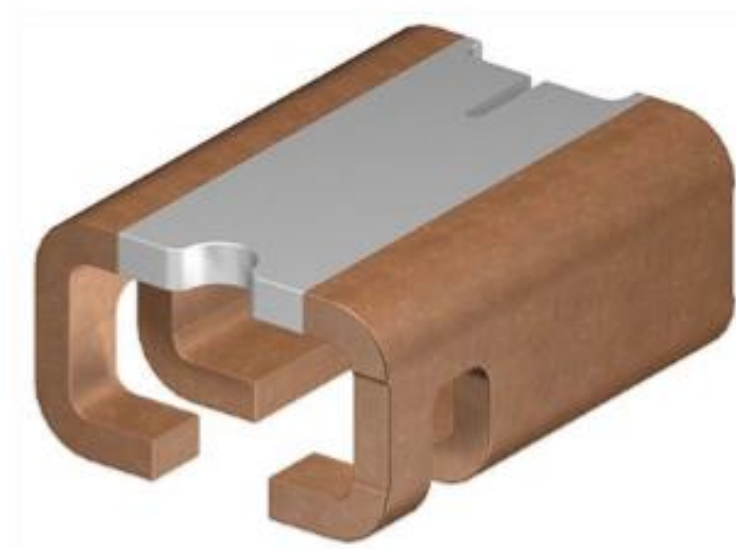




New Power Applied Materials Co., Ltd.

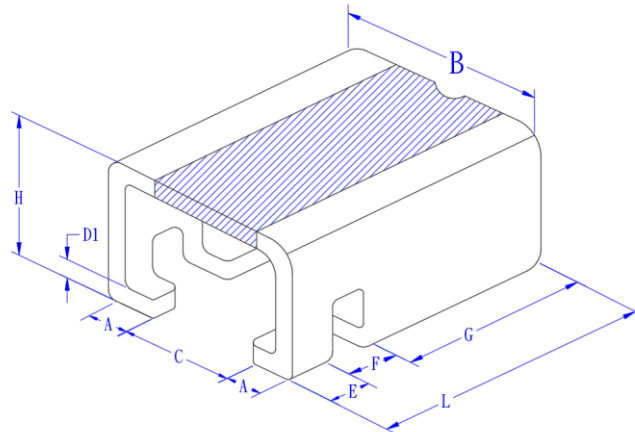
High Power Shunt Resistor



Scope

This specification applies for metal type current shunt resistor.

Dimensions



Type	Dimensions(mm)						
(inch size)	L	B	H	E	F	G	C
SR1216 L50	3.81±0.30	3.00±0.15	1.80±0.10	0.50±0.10	0.60±0.15	2.70±0.10	0.95±0.15
SR1216 1L0	3.81±0.30	3.00±0.15	1.80±0.10	0.50±0.10	0.60±0.15	2.70±0.10	0.95±0.15

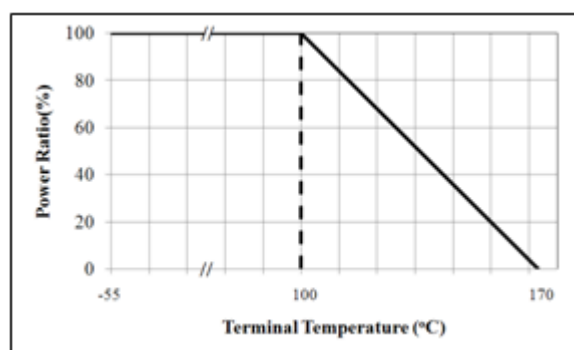
Features

- ◆ 3W~5W permanent power, Inductance<3nH
- ◆ Internal heat resistance <15K/W
- ◆ Lead free, RoHs compliant for global applications and halogen free

Application

- ◆ Power modules
- ◆ Frequency converters
- ◆ Current sensor for power hybrid sources
- ◆ High current for automotive

Derating Curve



Part Numbers

SR 1216 E F H 1L00

(1) (2) (3) (4) (5) (6)

- (1)Series Name: SR (Shunt Resistor)
- (2) Chip size: 1216(inch)
- (3)Packaging Material: Emboss
- (4)Resistance Tolerance: $\pm 1\%$ (F), $\pm 5\%$ (J)
- (5)Power rating: L=5W, H=3W
- (6)Resistance Code: Ex: 1L0 means 1.0m Ω , etc.

Electrical Specification

Item	Power Rating	Resistance Range(m Ω)	Operation Temp. Range	TCR (PPM/ $^{\circ}$ C)	Resistance Material
SR1216	5W	0.5	-55~+170 $^{\circ}$ C	± 50	MnCuSn
SR1216	3W	1.0	-55~+170 $^{\circ}$ C	± 50	MnCu

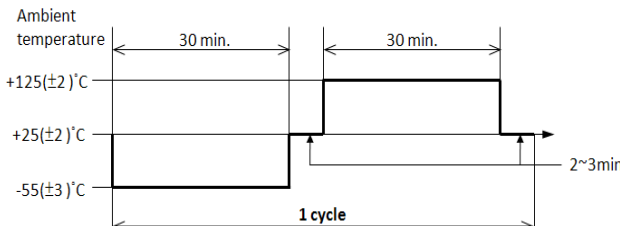
Performances

Environmental Performance

No.	Item	Test Condition	Specification
1	Short Time Overload	Loading 5 times rate power 5sec	ΔR : $\pm 1\%$
2	Temperature Coefficient of Resistance (T.C.R.)	-20 $^{\circ}$ C /+125 $^{\circ}$ C. (JIS-C5202-5.2) $TCR \text{ (ppm/^{\circ}C)} = \frac{\Delta R}{R \times \Delta t} \times 10^6$	Refer to electrical specification.
3	Moisture Resistance	The specimens shall be placed in a chamber and subjected to a relative humidity of 90~98% percent and a temperature of 25 $^{\circ}$ C / 65 $^{\circ}$ C 10 cycles (MIL-STD-202, Method 106)	ΔR : $\pm 1\%$
4	High Temperature Exposure	The ship (mounted on board) is exposed in the heat chamber 125 $^{\circ}$ C for 1000 hrs. (JIS-C5202-7.2)	ΔR : $\pm 1\%$

Performances

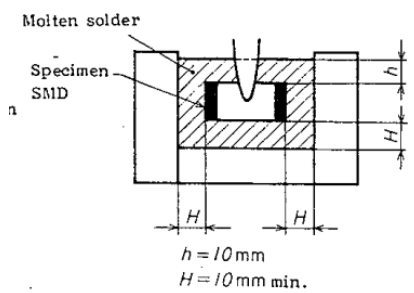
Environmental Performance

No.	Item	Test Condition	Specification
5	Load Life	Apply rated power for 1000 hours with 1.5 hours ON and 0.5 hour OFF. (JIS-C5202-7.10)	$\Delta R: \pm 1\%$
6	Rapid change of temperature	<p>The chip (mounted on board) is exposed, $-20 \pm 3^\circ\text{C}$ (30min.)/$+125 \pm 2^\circ\text{C}$ (30min.) for 5 cycles. The following conditions as the following figure. (JIS-C5202-7.4)</p> 	$\Delta R: \pm 1\%$

Remark:

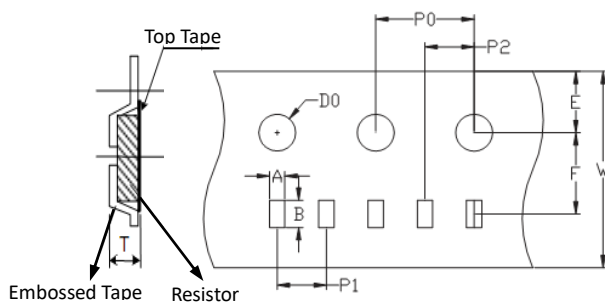
- The terminal electron temperature of component should below 100°C .

Function Performance

No.	Item	Test Condition	Specification
2	Solderability	<p>The specimen chip shall be immersed into the flux specified in the solder bath $235 \pm 5^\circ\text{C}$ for 2 ± 0.5 sec. It shall be immersed to a point 10mm from its root. (Sn96.5/Ag3.0/Cu0.5) (JIS-C5 202-6.11)</p> 	Solder shall be covered 95% or more of the electrode area.

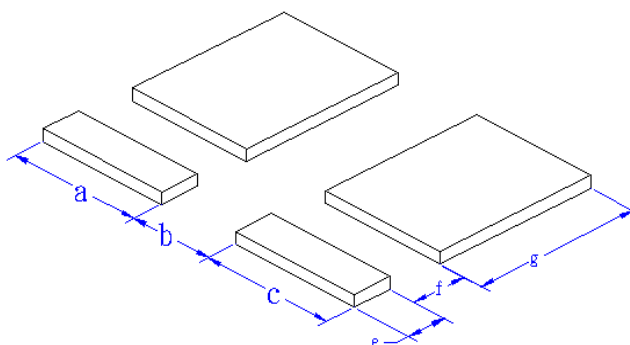
Tape Packaging Specifications

◆Embossed Plastic Tape Specifications



Type	Carrier Dimensions (mm)									
	A	B	E	F	W	P0	P1	P2	D0	T
SR1216	3.3±0.1	4.2±0.1	2.64±0.1	5.5±0.1	12.0±0.2	4.0±0.1	8.0±0.1	2.0±0.05	1.5±0.1	2.1±0.1

Recommended Pad Layout



Type (inch size)	Dimensions(mm)					
	a	b	c	e	f	g
SR1216	1.5	0.6	1.5	0.7	0.5	2.95

Packaging

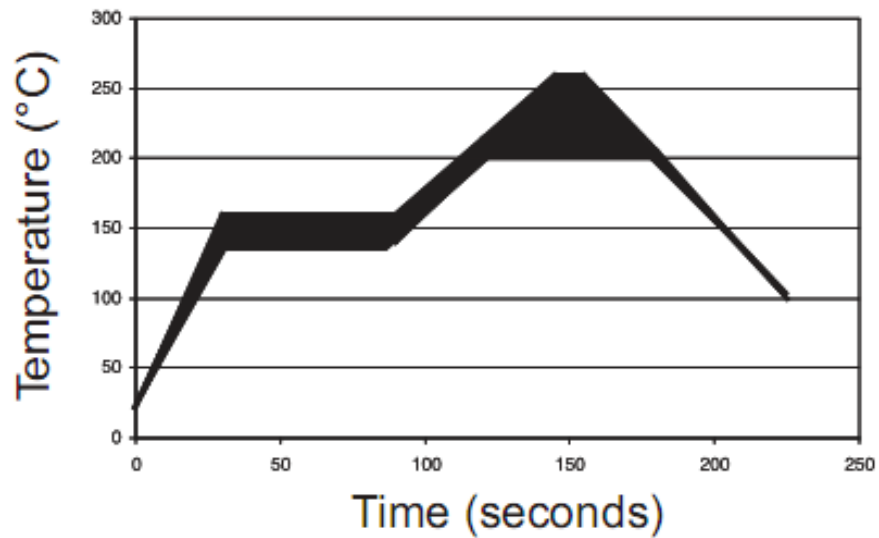
Size EIA (EIAJ)	1216
Standard Packing Quantity (pcs /Reel)	3000

Storage Conditions

Temperature : 22~28°C, Humidity : 40~75%

Soldering Recommendations

- ◆ Peak reflow temperatures and durations :
 - IR Reflow Peak = 260°C max for 10 sec
 - Not suitable for wave soldering
- ◆ Recommended IR Reflow Profile :



ECN

Engineering Change Notice : The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.