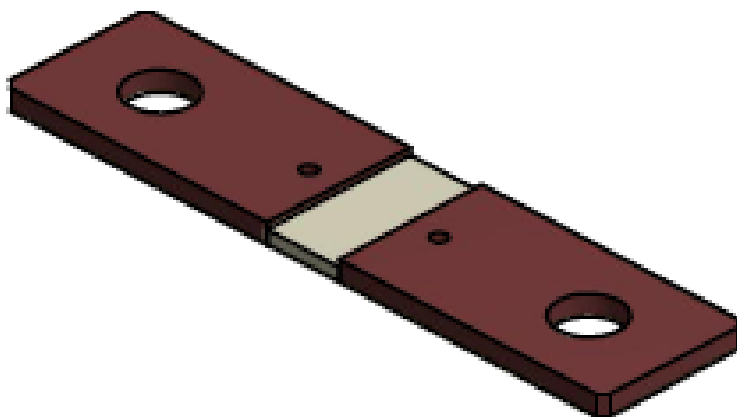


Shunt Resistor Specification

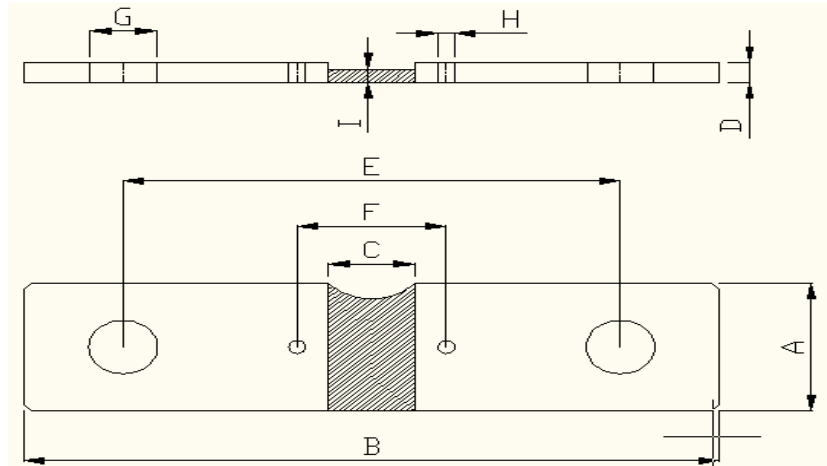


Current Sensing Shunt Resistor

Scope

This specification applies of metal foil current shunt resistor rectangular type.

Dimensions



Type (size)	Dimensions(mm)								
	A	B	C	D	E	F	G	H	I
8420 L10	20±0.2	84±0.2	8.7±0.2	3±0.2	60±0.2	18±0.2	8.3±0.1	2.0±0.1	2.0±0.2

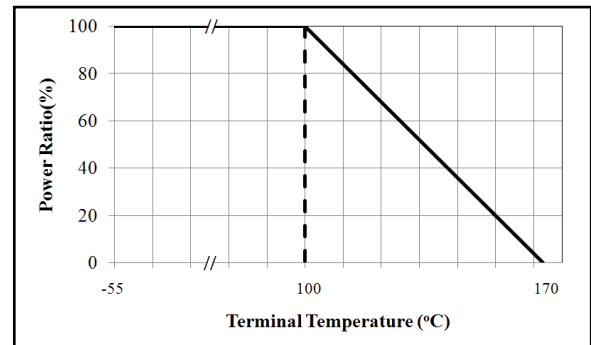
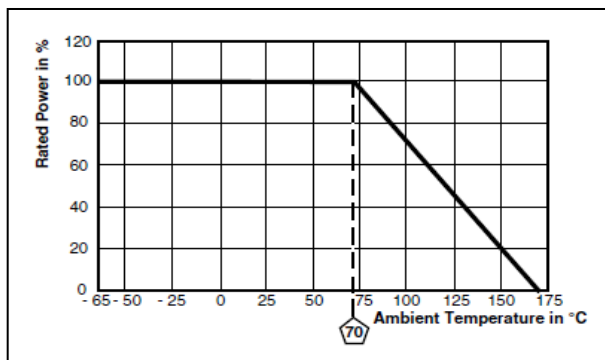
Features

- ◆ Excellent long term stability
- ◆ Lead free, RoHs compliant for global applications and halogen free
- ◆ High power to resistor size ratio

Application

- ◆ Power modules
- ◆ Current sensing in welding equipment
- ◆ Current sensor for BMS (battery management system) in automobile, truck, forklift, hybrid and EV
- ◆ current sensing in bus bars

Derating Curve



Part Numbers

SR 8420 B J Z 0L10

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

(1)Series Name: SR (Shunt Resistor)

(2) Chip size: 8420 (mm)

(3)Packaging Material: Bulk(B)

(4)Resistance Tolerance: ± 5% (J)

(5)Power rating: Z=36W

(6)Resistance Code: Ex: 0L10 means 0.1mΩ, etc.

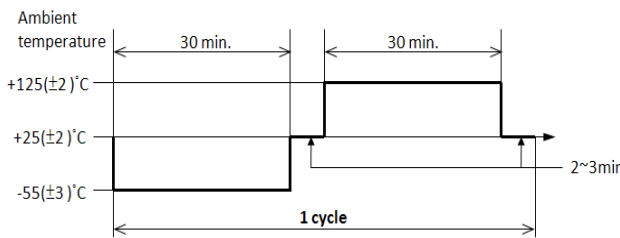
Electrical Specification

Item	Power Rating	Resistance Range(mΩ)	Operation Temp. Range	TCR (PPM/k)
8420	36W	0.1	-55~+170℃	±225

Performances

Environmental Performance

No.	Item	Test Condition	Specification
1	Short Time Overload	5x rated power for 5 sec , (JIS-C5202-5.5)	ΔR: ±(1%+0.0005Ω)
2	Temperature Coefficient of Resistance (T.C.R.)	+25℃ /+125℃. (JIS-C5202-5.2) $TCR \text{ (ppm/℃)} = \frac{\Delta R}{R \times \Delta t} \times 10^6$	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℃ / 65℃ 10 cycles (MIL-STD-202, Method 106)	ΔR: ±(1%+0.0005Ω)
4	High Temperature Exposure	The ship (mounted on board) is exposed in the heat chamber 125℃ for 1000 hrs. (JIS-C5202-7.2)	ΔR: ±(1%+0.0005Ω)
5	Load Life	Apply rated power at 70±2℃ for 1000 hours with 1.5 hours ON and 0.5 hour OFF. (JIS-C5202-7.10)	ΔR: ±(1%+0.0005Ω)

6	Rapid change of temperature	<p>The chip (mounted on board) is exposed, $-55\pm 3^{\circ}\text{C}$ (30min.)/$+125\pm 2^{\circ}\text{C}$ (30min.) for 5 cycles. The following conditions as the following figure. (JIS-C5202-7.4)</p>  <p> $-55(\pm 3)^{\circ}\text{C}$ $+25(\pm 2)^{\circ}\text{C}$ $+125(\pm 2)^{\circ}\text{C}$ </p> <p>30 min. 30 min. 2~3min. 1 cycle</p>	$\Delta R: \pm(1\%+0.0005\Omega)$
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Remark:

- The surface temperature of component should below 100°C

Packaging

Size	8420
Standard Packing Quantity (pcs /Bulk)	100

Storage Conditions

Temperature : $22\sim 28^{\circ}\text{C}$, Humidity : $40\sim 75\%$

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.