

## SPECIFICATION FOR APPROVAL

### 2W, 2816, SL Type Low Resistance Chip Resistor (Lead / Halogen Free)

#### 1. Scope

This specification applies to 4.2mm x 7.1mm size 2W, fixed metal foil current sensing resistors used in electronic equipment.

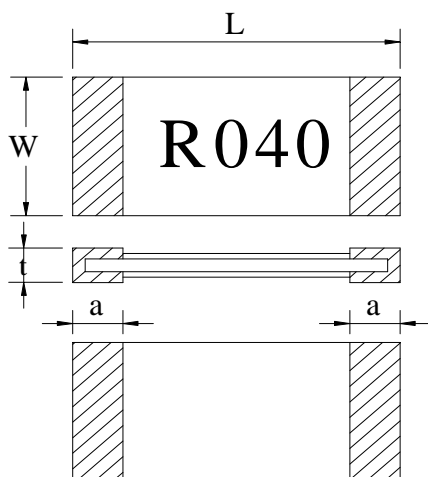
#### 2. Type Designation

RL2816SL – 9

(1)            (2)            (3)            (4)

- Where
- (1) Series No.
  - (2) 9 = 2W
  - (3) Resistance value :  
For example :  
Four digits of number  
R040 = 40mΩ
  - (4) Tolerance :  
Refer to paragraph 4

#### 3. Dimensions and schematic



Code Letter	Dimensions (mm)
	2816
L	7.3 ± 0.3
W	4.4 ± 0.30
a	1.5 ± 0.30
t	0.70 ± 0.25

Note: Marking (No Direction)

Figure 1. Construction and Dimensions



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(Preliminary specification)

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## 4. Specification

Characteristics	Feature
Power Rating*	2W
Resistance Value	40 mΩ
Temperature Coefficient of Resistance	± 75ppm/°C
Operation Temperature Range	-55°C ~ +170°C
Resistance Tolerance	± 1%(F) , ± 2%(G) , ± 5%(J)
Insulation Resistance	Over 100MΩ
Maximum Working Voltage (V)	$(P \cdot R)^{1/2}$

Note \* :

Power rating is based on continuous full load operation at rated ambient temperature of 70°C. For resistors operated at ambient temperature in excess of 70°C, the maximum load shall be derated in accordance with the following curve.

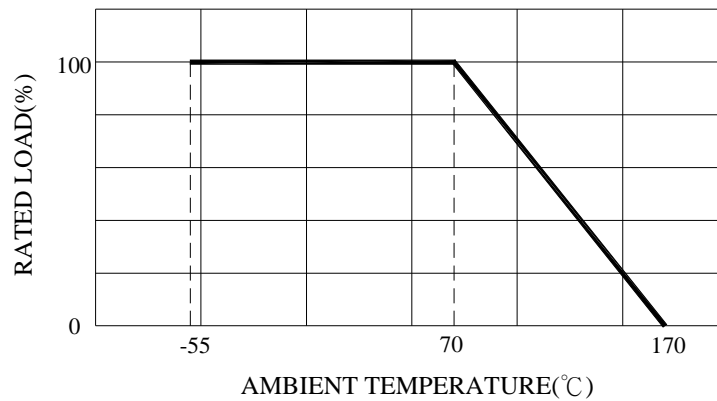


Figure 2. : Power Temperature Derating Curve



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## 5. Reliability Performance

Test Item	Condition of Test	Requirements
Short Time Overload	2.5 x Rated power for 5 seconds Refer to JIS C 5201-1 4.13	$\Delta R : \pm (0.5\%)$
Thermal Shock	-55 ~125°C 100 cycles, 15 min at each extreme condition Refer to JIS C 5201-1 4.19	$\Delta R : \pm (0.5\%)$
Low Temperature Storage	Kept at -55°C, 1,000 hours Refer to JIS C 5201-1 4.23.4	$\Delta R : \pm (0.5\%)$
Resistance to Soldering Heat	Dipped into solder at 270 ± 5°C for 20 ± 1 seconds Refer to JIS C 5201-1 4.18	$\Delta R : \pm (0.5\%)$
Load Life	Rated voltage for 1.5hours followed by a pause 0.5hour at 70 ± 3°C Cycle repeated 1,000 hours Refer to JIS C 5201-1 4.25	$\Delta R : \pm (1.0\%)$
Biased Humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 h Refer to MIL-STD-202 Method 103	$\Delta R : \pm (1.0\%)$
High Temperature Exposure	Kept at 170°C for 1,000 hours Refer to JIS C 5201-1 4.23.2	$\Delta R : \pm (1.0\%)$
Solderability	Temperature of Solder : 245 ± 5°C Immersion Duration : 3 ± 0.5 second Refer to JIS C 5201-1 4.17	Uniform coating of solder cover minimum of 95% surface being immersed
Substrate Bending	Glass-Epoxy board thickness : 1.6mm Bending width : 2mm Between the fulcrums : 90mm Refer to JIS C 5201-1 4.33	$\Delta R : \pm (0.5\%)$



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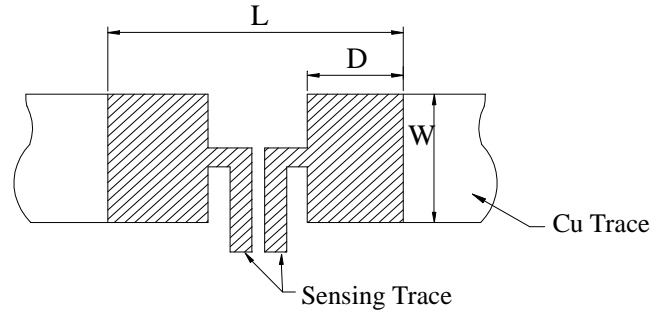
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## 6. Recommended Solder Pad Dimensions

	W	L	D
2816	4.70	8.10	2.45



Note : We recommend there is no circuit design between pads to avoid circuit short