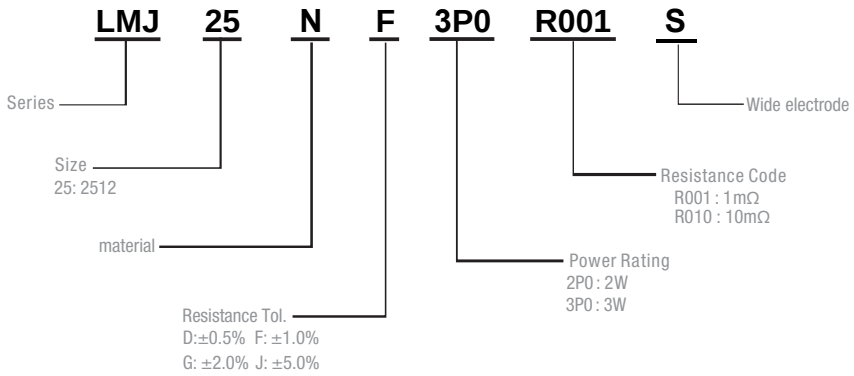
Current Sensing Resistors
LMJ25 Series

Description

- Proprietary processing technique produces extremely low resistance values
- Very low inductance
- Low thermal EMF
- Metallic Material

Part Numbering System



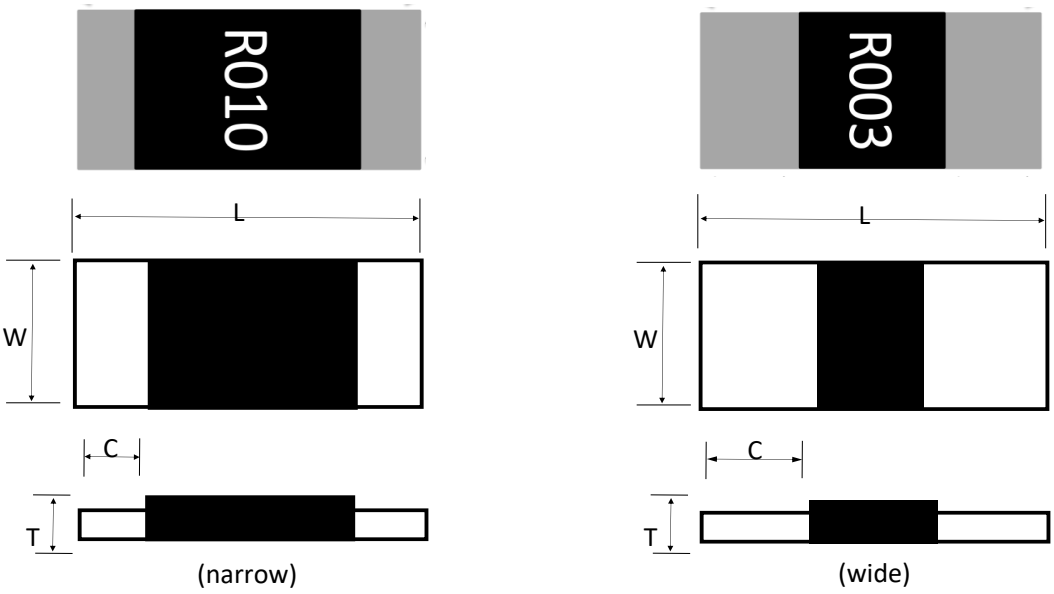
Parameter	Standard
Power Rating	2 W & 3W
Resistance Value	1~10mΩ
Operating Temperature Range	-55 to +170°C
Component Temperature Coefficient (TCR)	± 50 & 380 ppm/°C
Maximum Working Voltage (V)	$(P \times R)^{1/2}$
Rating Current (A)	$(P / R)^{1/2}$

P=Power Rating; R=Resistance Value

Standard Electrical Specifications

Type	Rating Power at 70℃	T.C.R. (ppm/℃)	Resistance Range(mΩ) ±0.5% (D); ±1.0%(F) ±2.0%(G); ±5.0%(J)	Electrode	Operating Temperature(℃)
LMJ25	2W	50	1-10	1-4: (wide) 2-10:(narrow)	-55~+170°C
	2&3W	380	1-1.5	1: (narrow)	

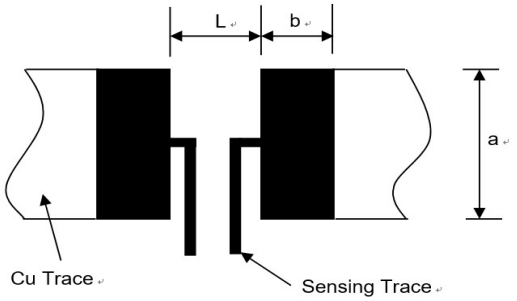
Construction



Unit: Millimeters

Type	Power	L	W	C	T
LMJ 25	2&3W	6.4±0.2	3.2±0.2	0.95±0.25(narrow)	0.9±0.2
				2.1±0.25 (wide)	

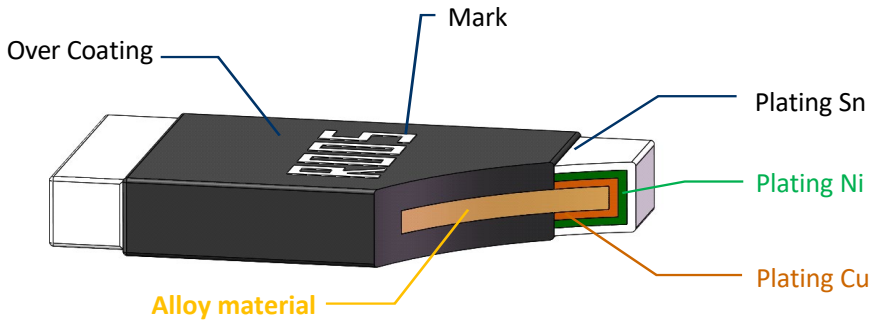
Recommended land pattern



Unit: Millimeters

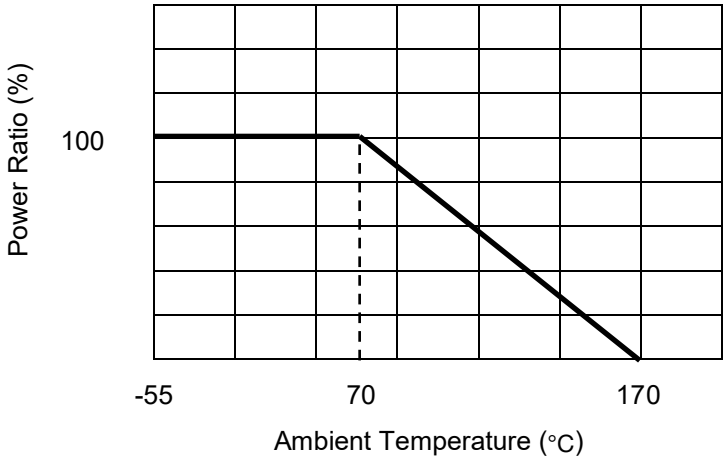
Resistance Range (mΩ)	a	b	L
1-4 (wide)	4.0±0.1	3.1±0.1	1.3±0.1
1~10 (narrow)	4.0±0.1	2.1±0.1	4.1±0.1

Product structure diagram

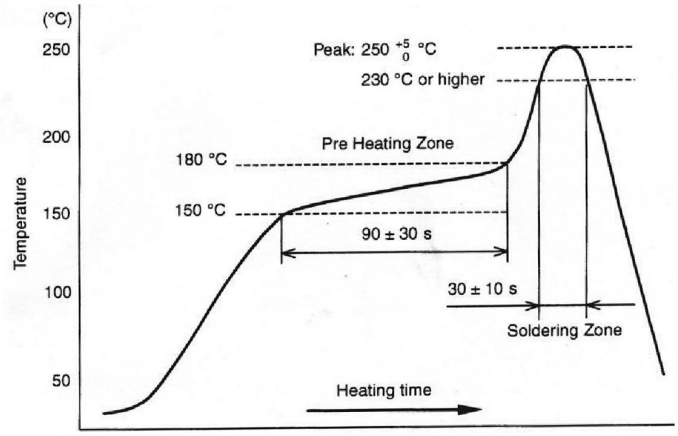


Power Derating Curve

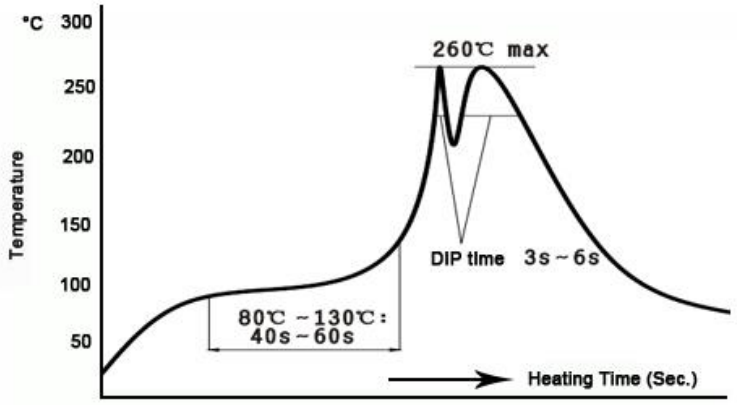
For resistors operated in ambient temperatures 70°C, power rating shall be derated inaccording with the curve below:



IR Reflow-Soldering Profile



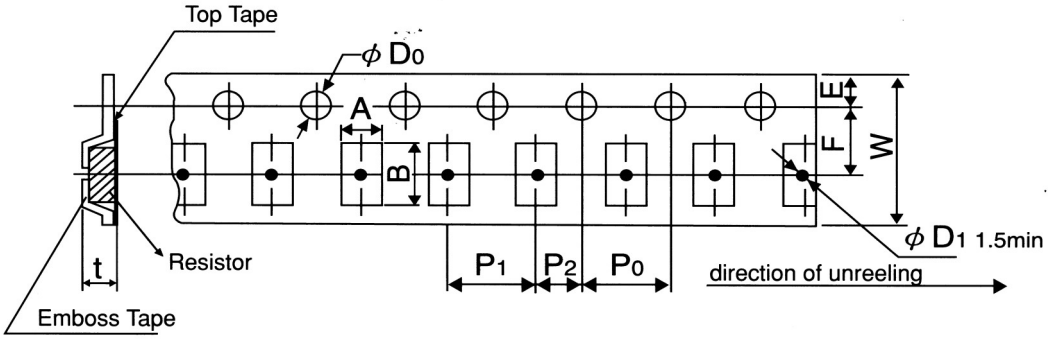
Wave- Soldering Profile



Product Characteristics

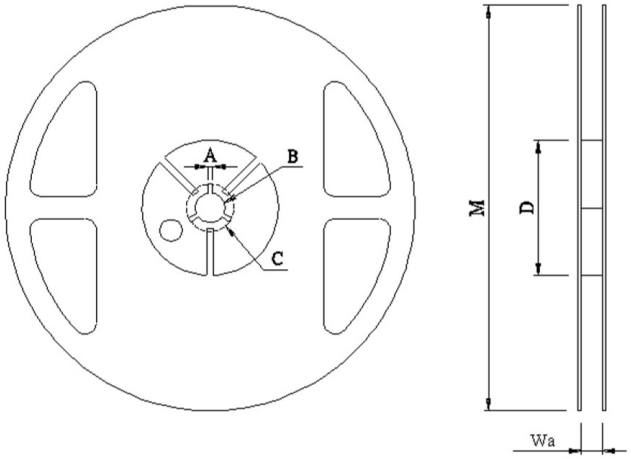
Item	Test condition/ Methods	Limited	Standard
Temperature coefficient of resistance	TCR =(R-R_0)/R_0(T2-T1)X 10^6 R_0: resistance of room temperature R: resistance of 125℃ T1: Room temperature T2: Temperature at 125℃	Refer to Spec	MIL-STD-202 Method 304
Short time Overload	Apply overload for 5 seconds and measure the resistance change rate after standing for 24 hours. 5 times the rated power for 5 seconds	≤±0.5%	MIL-R-26E
Resistance to Soldering Heat	260℃± 5℃ time：10sec± 1sec	≤±0.5%	MIL-STD-202 Method 210
Temperature Cycling	-55℃ /+150℃, 15min， 1 000 cycles	≤±0.5%	MIL-STD-202 Method107G
Low temperature Storage	-55℃±2℃ for 96hours, No power	≤±0.5%	MIL-STD-26E
High Temperature Storage	170℃ for 1000hours, No power	≤±1%	IEC6011501-4.25
Bias Humidity	+85℃，85% RH，10%bias, 1000hours	≤±0.5%	MIL-STD-202 Method103
Solderability	245±5℃, 3±1sec	At least 95% of surface area of electrode shall be covered with new solder	IEC60115-1-4.17 JIS-C5201-4.17
Operational life	70℃± 2℃, 1000 hours, at rated power 1.5 hours “ON”, 0.5 hours “OFF”	≤±1%	MIL-STD-202 Method 108
Terminal bending	(Flexural test) Weld it into the bending test plate, place it on the bending test machine, apply 2.5kg force in the center of the test plate, press 2mm under the load for 60s, and measure the resistance change rate.	≤±0.5%	JIS-C5201-1 4.33

Tapping & Package



Type	Pack	A ±0.2	B ±0.2	D0 +0.05/-0	E ±0.1	F ±0.05	P0 ±0.1	P1 ±0.1	P2 ±0.1	W ±0.2	D1 ±0.05	T ±0.15
2512	Emboss	3.60	6.90	1.50	1.75	5.50	4.00	4.00	2.00	12.00	1.50	1.20

Reel Specification



Type	A	B	C	D	M	W
2512	2.00±0.5	13.50±0.5	21.00±0.5	60.00±1.0	178.00±2.0	13.80±0.5

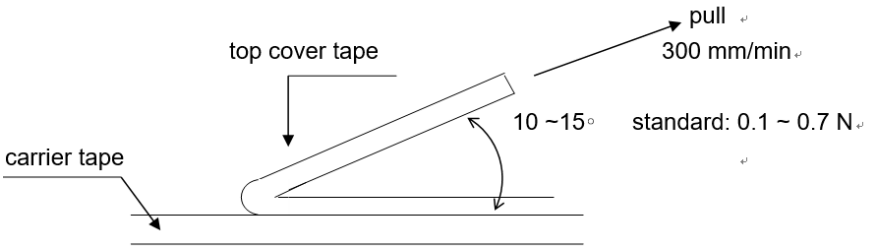
Packaging

Quantity: 4, 000pcs

8mm wide tape on 178mm(7 inch) diameter reel -specification EIA Standard 481.

Peel strength of upper belt

Stripping speed: 300 mm / min; The peel force is between 0.1N and 0.7n.



Storage conditions & shelf life

It can be stored for 2 years under closed conditions with temperature of 5 ° C ~ 35 ° C and relative humidity of 40 ~ 75

Please avoid the following harsh environment during storage to avoid affecting the product performance and solder connectivity: the places with corrosive gases such as sea breeze, Cl2, H2S, NH3, SO2 and NO2 shall be stored without direct sunlight.

Precautions for product use

When measuring the resistance value before welding, a special resistance meter with high precision shall be used. When measuring, a 4-wire probe or fixture must be used. 4. When measuring parts with a wire measuring needle, the 4 measuring needles must indeed contact the parts.

Avoid damaging the protective layer during manual welding or clamping with tweezers.

When the PCB is divided or fixed on the support, be careful to avoid excessive bending causing mechanical stress to the resistor.

It shall be used within the rated power range within the specification, especially when the power exceeds the rated value, which may affect the reliability of the product