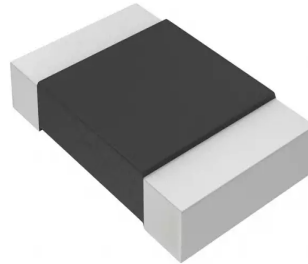
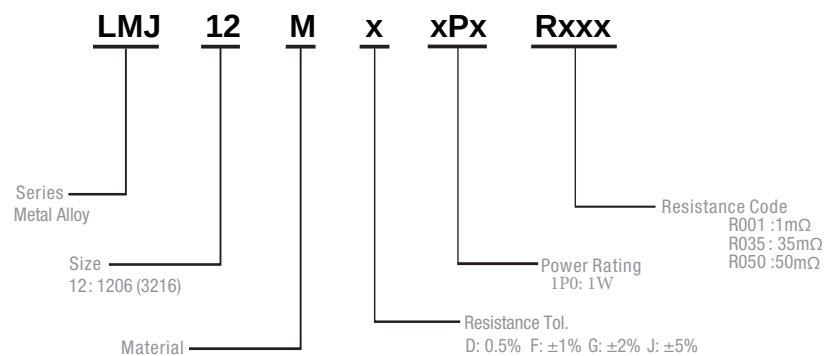


Description

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



Part Numbering System



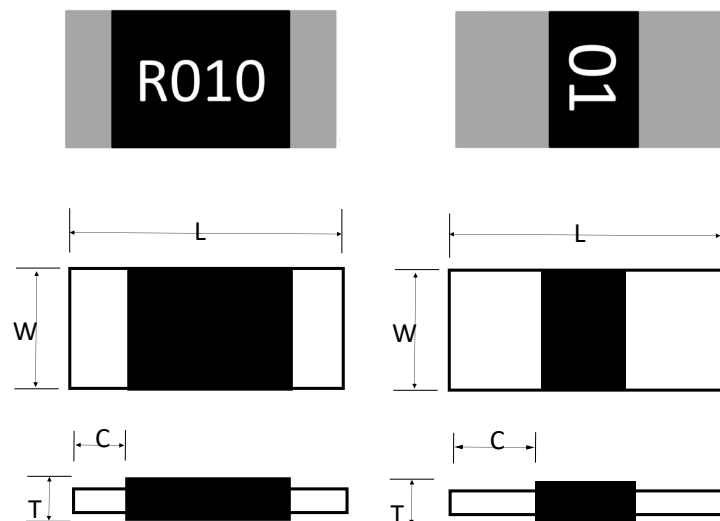
Parameter	Standard
Power Rating	0.5&1W
Resistance Value	1~200mΩ
Operating Temperature Range	-55 to +170°C
Component Temperature Coefficient (TCR)	± 50&380 ppm/°C
Maximum Working Voltage (V)	$(P \times R)^{1/2}$
Rating Current(A)	$(P / R)^{1/2}$

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)	Meterial	Electrode	Operating Temperature(℃)
LMJ12	1W	380	1~100	R001~R100: CuMn	R001	-55~+170℃
		50			R001: (S)	
					R002~R100	
	0.5W	50	101~200	R101~R200: karma	R101~R200	

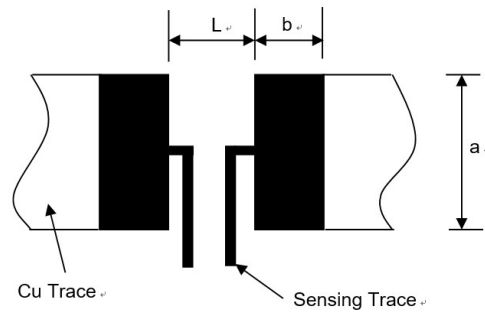
Dimensions



Unit: Millimeters

Type	Resistance Range (mΩ)	L	W	C	T
LMJ12	1 (S)	3.2±0.2	1.6±0.2	1.2±0.2	0.7±0.15
	1~200	3.2±0.2	1.6±0.2	0.5±0.2	0.7±0.15

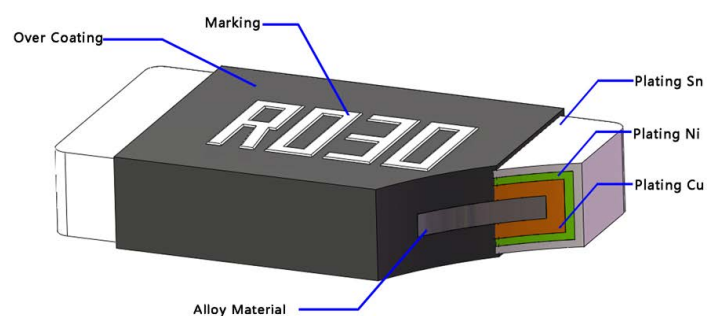
Recommended land pattern



Unit: Millimeters

Resistance Range (mΩ)	a	b	L
1 (S)	1.8±0.1	2.3±0.1	1.0±0.1
1~200	1.8±0.1	1.7±0.1	1.6±0.1

Product structure diagram

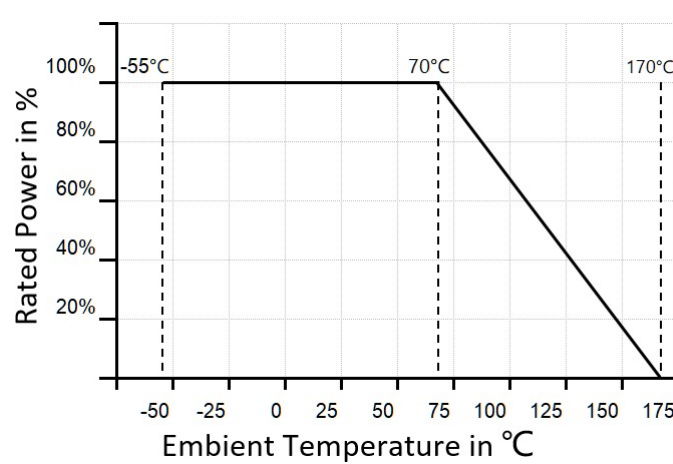


Part	Figure Name	Material	Thickness (Reference value)
Resistive Element	Alloy Material	MnCu	150±8um
Protective Coating	Over coating	SiO2 & Epoxy	700±150um
Marking	Marking	Epoxy	5±3um
Terminal Electrode	Plating Cu	Cu	120±20um
Terminal Electrode	Plating Ni	Ni	5±2um
Terminal Electrode	Plating Sn	Sn	8±3um

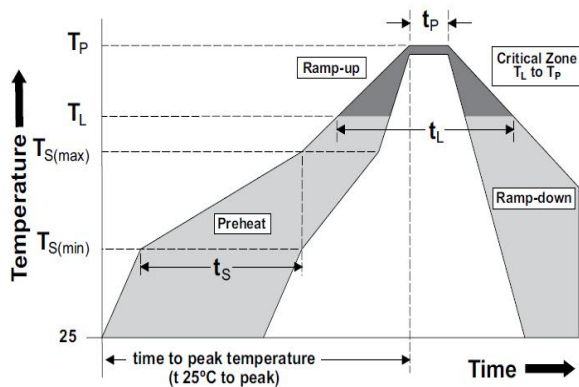
Product Characteristics

Item	Test condition/ Methods	Limited	Standard
Resistance	Measuring resistance value at room temperature 25°C±5°C	Refer to Spec	IEC60115-1 4.5
Temperature coefficient of resistance	$TCR = (R - R_0) / R_0 (T_2 - T_1) \times 10^6$ R ₀ : resistance of room temperature R: resistance of 125°C T ₁ : Room temperature T ₂ : Temperature at 125°C	Refer to Spec	MIL-STD-202 Method 304
Short time Overload	5×Rated power for 5 seconds	≤±0.5%	MIL-STD-202 Method 210
Resistance to Soldering Heat	260°C± 5°C time: 10sec± 1sec	≤±0.5%	MIL-STD-202 Method 210
Temperature Cycling	-55°C (30min)/+125°C(30min), 1000 cycles	≤±0.5%	MIL-STD-202 Method107G
Low temperature Storage	-55°C for 1000hours, No power	≤±0.5%	MIL-STD-26E
High Temperature Storage	125°C for 1000hours, No power	≤±1%	IEC6011501-4.25
Bias Humidity	+85°C, 85% RH, 10%bias, 1.5 h "ON", 0.5 h "OFF", 1000hours	≤±0.5%	MIL-STD-202 Method103
Joint Strength of Solder	Soldered on the bending test plate, put on the bending testing machine, pressed under force in the center of the test plate, measure its resistance variance rate under load	≤±0.5%	JIS-C5201
Solderability	Temperature of Solder: 245±5°C Dipping time:3±1s	Solder coverage over 95%	IEC60115-1 4.17
Load life	1000 h at 70 °C , 1.5 h "ON", 0.5 h "OFF"	≤±1%	JIS-C5201
Operational life	125°C± 3°C, 1000 hours, at rated power	≤±0.5%	MIL-STD-202 Method 108

Derating Curve

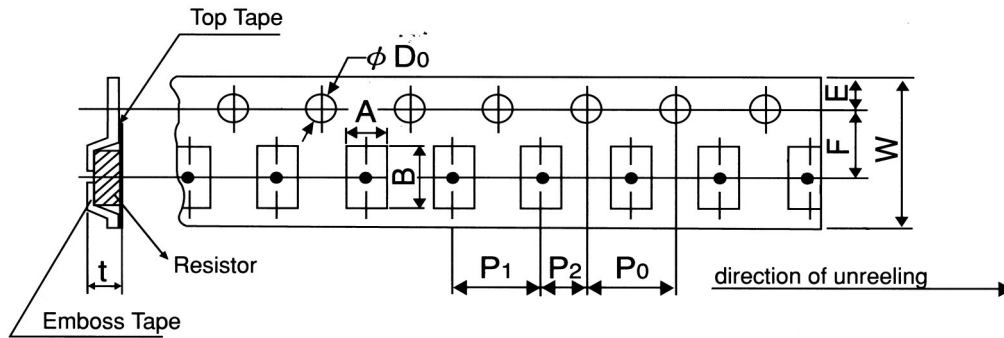


Recommended Solder Curve



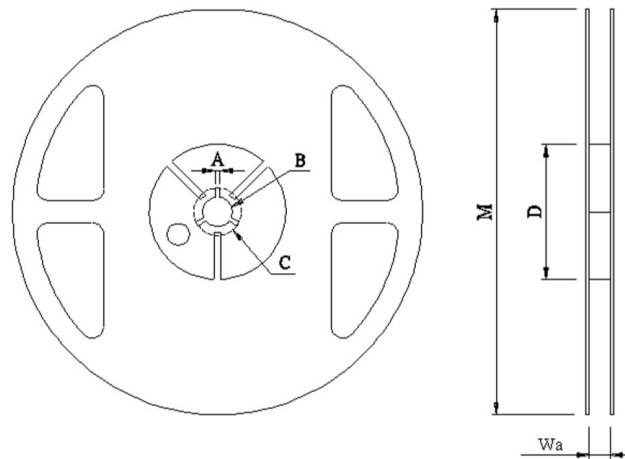
Reflow Condition		Pb – Free assembly
Pre heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 120 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		5°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		5°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Wave Soldering		260°C, 10 seconds max.
Hand Soldering		350°C, 5 seconds max.

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	T ±0.15
1206	Paper	2.00	3.60	1.50	1.75	3.50	4.00	4.00	2.00	8.00	0.81

Reel Specification



Type	A	B	C	D	M	W
1206	2.00±0.5	13.5±0.5	21.00±0.5	60.00±1.0	178.00±2.0	9.00±1.0

Packaging

Quantity: 5, 000pcs

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