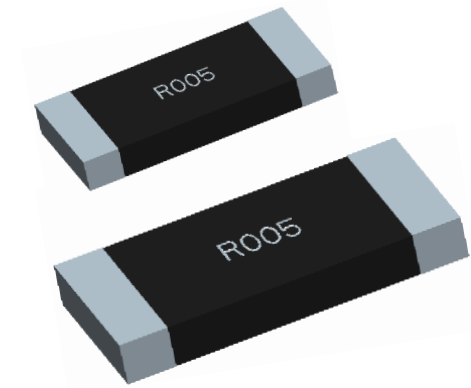


LMR45 Series Low Resistance Metal Strip Chip Resistors



Description

- Welded construction product
- Resistance range: 1~200mR
- Rated power: 4~5W
- Low inductance design
- Alloy Material, Shock Resistance
- Operating temperature range: - 65°C~170°C

Applications

- Current sensing application
- Over current protection
- Servo motor control circuits
- Inverter power
- Electric control system
- Li-battery management system

Part number

LMR 45 F 5P0 R005

【1】 【2】 【3】 【4】 【5】

【1】 Series Name: Low resistance Metal strip Chip Resistors

【2】 Chip size: 45:4527

【3】 Resistance Precision: D:±0.5% ; F:±1% ; G:±2% ; J:±5%

【4】 Power Rating: 5P0=5W ; 4P0=4W

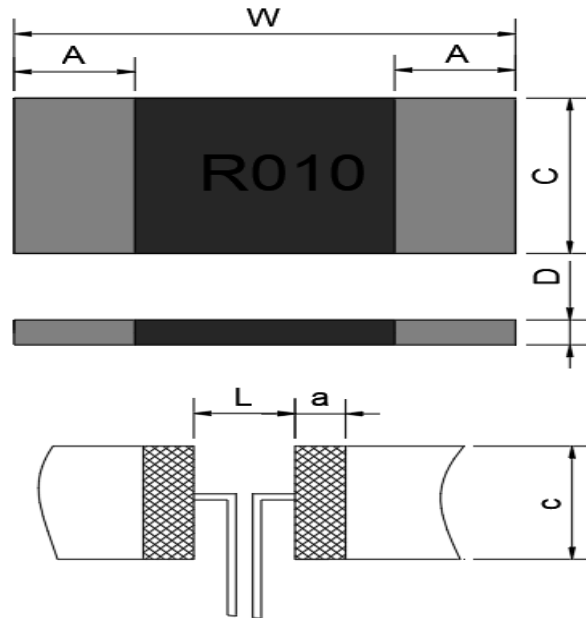
【5】 Resistance Code: R005: 5mΩ ; R050: 50mΩ

Standard Electrical Specifications

Size	Power (W) _(70°C)	Resistance/mΩ	TCR (ppm/°C)	Material	Operating Temperature (°C)
		±0.5%, ±1%, ±2%, ±5%			
4527	5	1 ~ 3	±75	Manganin	-65°C~170°C
		4 ~100	±50	Kamar	
	4	101 ~200			

Note: (1) Products of different sizes are being verified by power rating tests at other ambient temperatures.

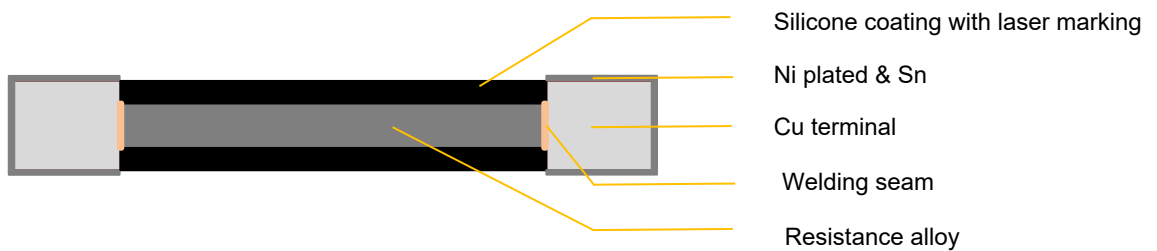
Products & Recommend Pad Dimension



Unit: mm

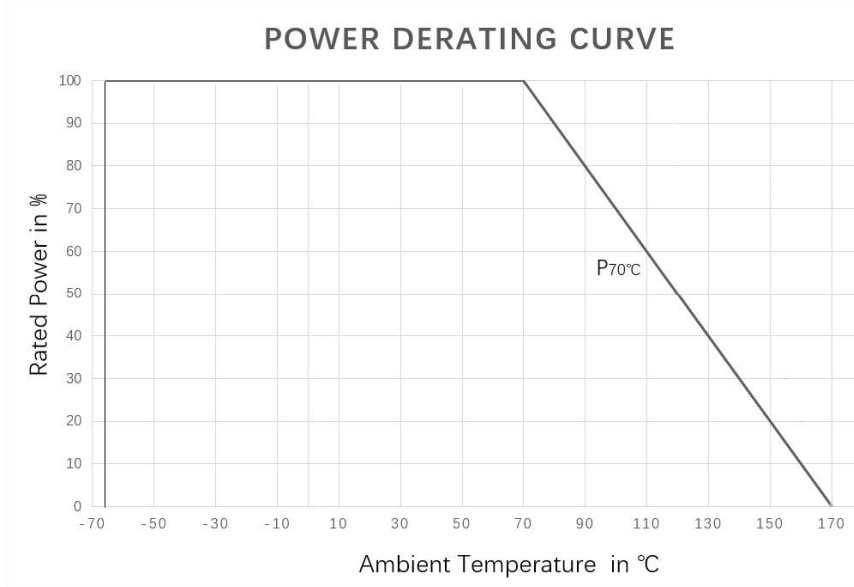
Type	Resistance	$W \pm 0.2$	$C \pm 0.2$	$A \pm 0.2$	$D \pm 0.1$	L	a	c
4527	1 ~ 200	11.6	6.9	2.0	1.0	7.0	3.4	8.7

Welded Construction

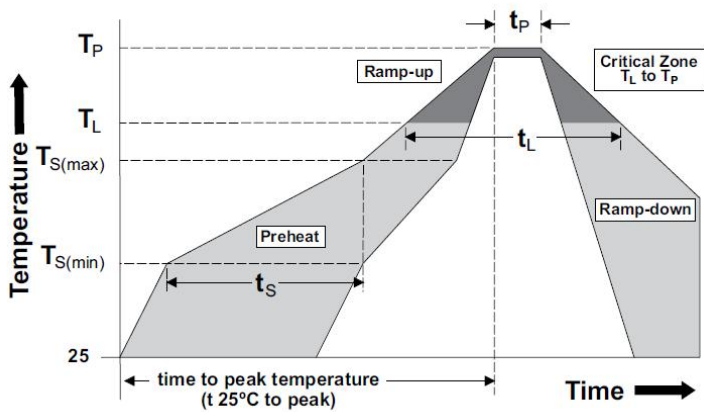


Power Derating Curve

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



Recommended Solder Curve

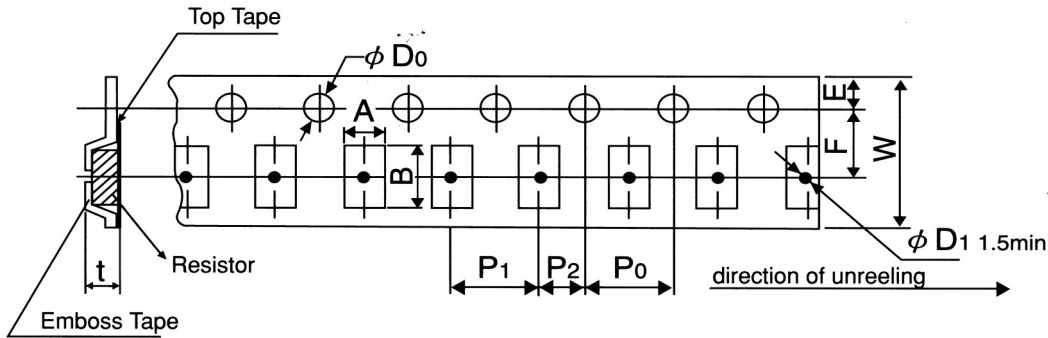


Reflow Condition		Pb – Free assembly
Pre heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (Min to Max) (t_S)	60 – 120 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		5°C/second max
TS(max) to TL - Ramp-up Rate		5°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (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.

Product Characteristics

Item	Additional Requirements	Limited	Reference
Temperature Cycling	1000 Cycles (-55°C to +150°C)	±0.5%	JESD22 Method JA-104
High Temperature Exposure	100hrs.@T=170°C.Unpowered.	±0.5%	MIL-STD-202 Method 108
Moisture Resistance	t=24hrs/cycle.Note: Steps 7a & 7b not required. Unpowered.	±0.5%	MIL-STD-202 Method 106
Biased Humidity	1000hrs 85°C/85%RH. Note: Specified conditions:10% of operating power.	±0.5%	MIL-STD-202 Method 103
Operational Life	Condition D Steady State TA=125°C at rated power.	±0.5%	MIL-STD-202 Method 108
Thermal Shock	1000X(-55°C to +150°C)	0.5%	MIL-STD-202Met hod107G
Solderability	235°C±5°C,2s±0.5s	95% Coverage Minimum	J-STD-202
Resistance to Soldering Heat	260°C±5°C, 10s±1s	±0.5%	MIL-STD-202 Method 210
Short Time Overload	4×Rated power for 5 s	±0.5%	MIL-STD-202 Method 201
Shock	100g , 6ms , axes Z and Y , 10 Shocks per axis	0.5%	MIL-STD-202 Method 213
VIBRATION	(10 - 2000 HZ) , 20g @0.1ms	0.5%	MIL-STD-202Met hod204

Tapping & Package



- Storage Conditions: Temperature:5°C~35°C, Humidity:40%~75%
- Embossed Plastic Tape

Type	Pack	A ±0.2	B ±0.2	D0 +0.5-0	E ±0.1	F ±0.05	P0 ±0.1	P1 ±0.1	P2 ±0.1	W ±0.2	D1 ±0.05	t ±0.15
4527	Emboss	7.40	11.80	1.50	1.75	11.50	4.00	12.0	2.00	24.00	1.50	2.30

Packaging

- Quantity: 3.000pcs

Storage

1. The temperature condition must be controlled at $25 \pm 5^\circ\text{C}$, The R.H. must be controlled at $60 \pm 15\%$. Store in accordance with this requirement, and the validity period is two years after the date of manufacture.
2. Please avoid the mentioned harsh environment below when storing to ensure product performance and its' weldability. Places exposed to sea breeze or other corrosive gas, such as Cl_2 , H_2S , NH_3 , SO_2 and NO_2 .
3. When the product is moved and stored, please ensure the correct orientation of the box. Do not drop or squeeze the box. Otherwise, the electrode or the body of the product may be damaged.