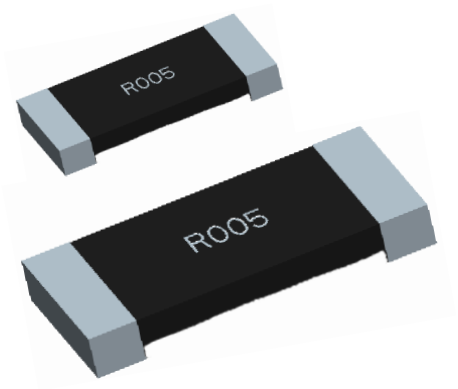
PROSEMI

LMR28 Series
Low Resistance Metal Strip Chip Resistors



Description

- Welded construction product
- Resistance range 1~100mR
- Rated power 4~5W
- Low inductance design
- Alloy Material, Shock Resistance
- Operating temperature range： - 65℃ ~170℃

Applications

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

Part number

LMR	28	F	4P0	R005
【1】	【2】	【3】	【4】	【5】

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

【2】Chip size: 28:2817

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

【4】Power Rating:4P0=4W ; 5P0=5W

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

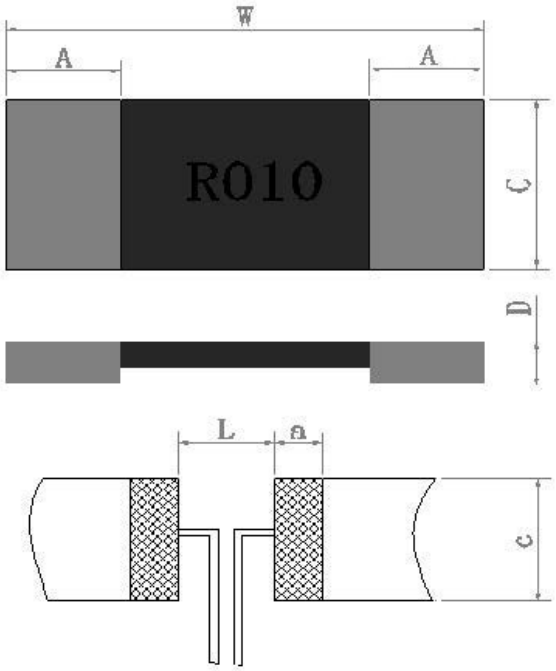
Standard Electrical Specifications

Size	Power (W)(1)	Resistance/mΩ	TCR (ppm/℃)	Material	Operating Temperature (℃)
		±0.5%, ±1% ±2%,±5%			
2817	4,5	1~3	±75	Manganin Kamar	-65℃~170℃
		4~50 *51~100	±50		

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

* Short Time Overload were tested with 2.5×Rated power for 10 s

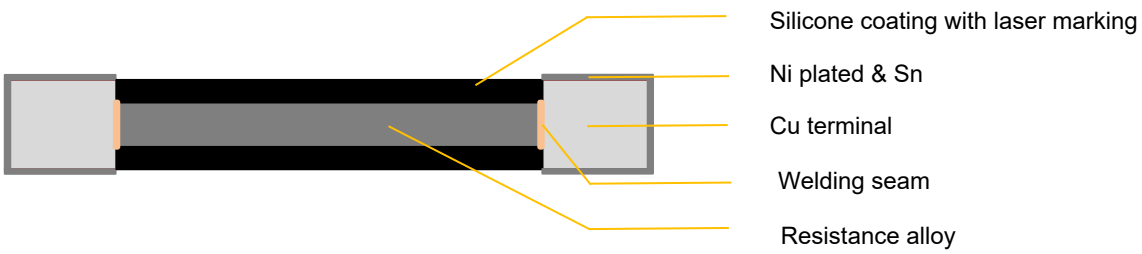
Products & Recommend Pad Dimension



Unit: mm

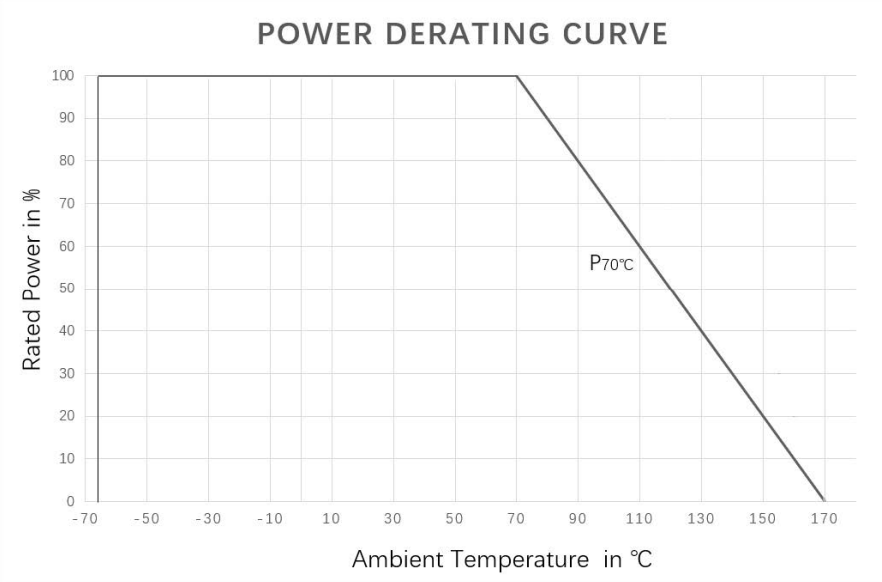
Type	Resistance	W±0.2	C±0.2	A±0.2	D±0.1	L	a	c
2817	1~4	7.1	4.3	1.2	0.8	3.5	2.7	5.2
	5 ~ 100							

Welded Construction

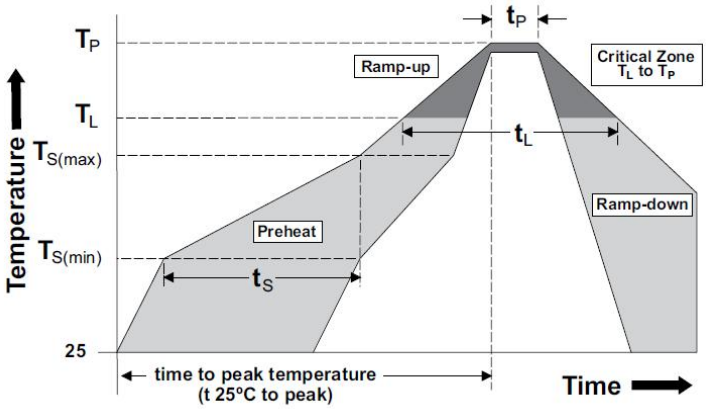


Power Derating Curve

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



Recommended Solder Curve



Reflow Condition		Pb – Free assembly
Pre heat	- Temperature Min (Ts(min))	150°C
	- Temperature Max (Ts(max))	200°C
	- Time (Min to Max) (ts)	60 – 120 secs
Average ramp up rate (Liquidus Temp (TL) to peak		5°C/second max
TS(max) to TL - Ramp-up Rate		5°C/second max
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Temperature (tL)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Wave Soldering		260°C, 10 seconds max.
Hand Soldering		350°C, 5 seconds max.

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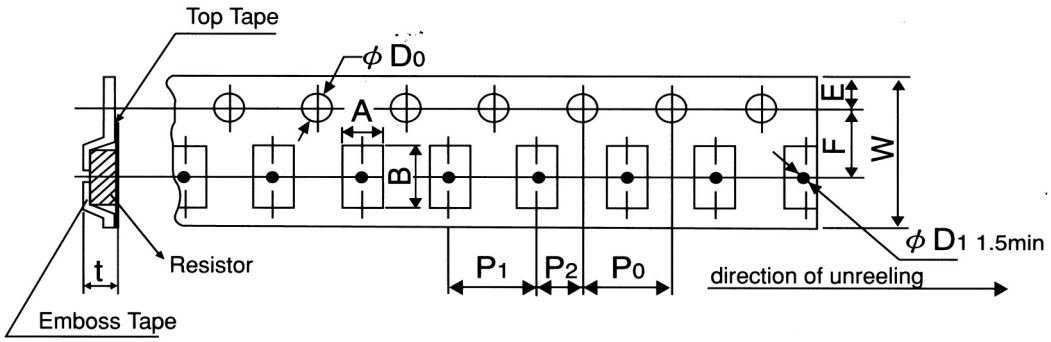
Product Characteristics

Item	Test condition/ Methods	Limited	Standard
Resistance	Measuring resistance value at room temperature 25℃±5℃	Refer to Spec	IEC60115-1 4.5
ESD Test	1) Direct Contact (DC): ±6kV; 2) Air Discharge (AD): ±12kV, ±16kV, ±25kV;	≤±0.5%	AEC-Q200 REV D June 1
Short time Overload	5×Rated power for 5 seconds * 2.5×Rated power for 10 s	≤±0.5%	MIL-STD-202 Method 210
Resistance to Soldering Heat	260℃± 5℃ time：10sec±1sec	≤±0.5%	MIL-STD-202 Method 210
Temperature Cycling	-55℃ (15min)/+150℃(15min), 1000 cycles	≤±0.5%	MIL-STD-202 Method107G
Solderability	235℃± 5℃, 2s±0.5s	At least 95% of surface area of electrode shall be covered with new solder	MIL-STD-26E
High Temperature Exposure	100hours T=170℃ No power	≤±0.5%	IEC6011501-4.25
Bias Humidity	+85℃，85% RH，10%bias, 1000hours	≤±0.5%	MIL-STD-202 Method103
Mechanical shock	Condition C ,100 g's ,6 msec, 3 mutually perpendicular axes, in 6 directions, three impacts each for a total of 18 times 18 shocks.	≤±0.5%	MIL-STD-202 Method 213
Vibration	The frequency varies from 10HZ to 2000HZ , shall be transferred in 1 min. Amplitude : 100 g's, 3 directions, 20 min, 12 cycles	≤±0.5%	MIL-STD-202 Method 201
Operational life	Condition D Steady State TA=125℃ at rated power.	≤±0.5%	MIL-STD-202 Method 108
Moisture resistance	No power, t=24hours/cycle,Steps 7a &7b not required	≤±0.5%	MIL-STD-202 Method 106

Tapping & Package



- Storage Conditions: Temperature:5℃~35℃, 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
2817	Emboss	4.80	7.20	1.50	1.75	7.50	4.00	6.00	2.00	16.00	1.50	1.20

Packaging

- Quantity: 1,500pcs
  16mm wide tape on 330mm(13 inch) diameter reel -specification EIA Standard 481.

Storage

1. The temperature condition must be controlled at 25±5℃， The R.H. must be controlled at 60±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 Cl2、H2S、NH3、SO2 and NO2.
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.