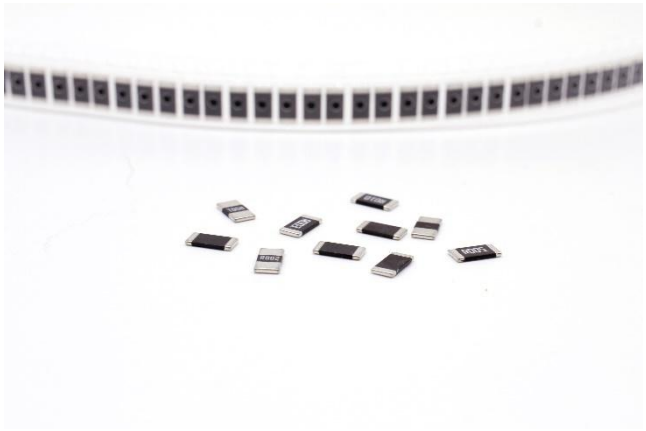


General

- Chip size from 1206 to 2512
- Resistance value from 1mΩ to 30mΩ
- Low thermal EMF
- Low TCR
- Lead free,RoHS compliant for global
- Applications and halogen free

Application

- Switching model power supply
- Battery pack
- Notebook, personal computer
- Test Instrument
- Power Amplifier

Electrical Specifications

Type	Power Rating at 70℃(W)	Resistance Range (mΩ)	TCR (ppm/℃)	Resistance tolerance	Operation Temp. Range
2512	2	1~10	±50	±1%	-55℃~+170℃
2512	3	1~3	±50	±1%	-55℃~+170℃
1206	1	3~30	±50	±1%	-55℃~+170℃

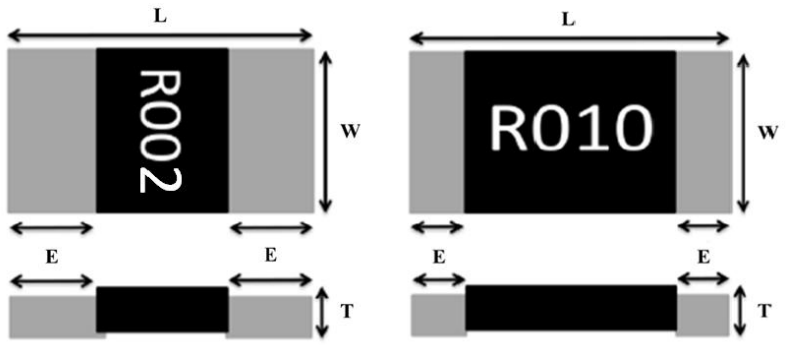
Part Number information

SMR 25 M 2 F R010 T

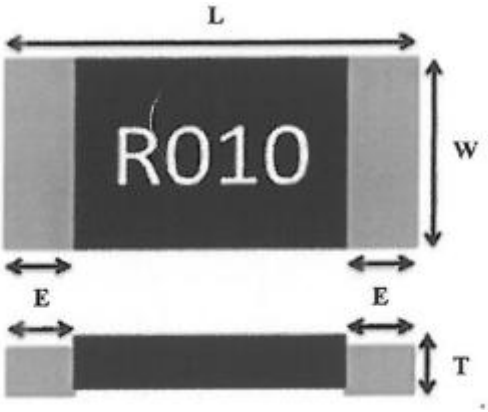
【1】 【2】【3 【4】【5】 【6】 【7】

【1】Series Name: SART Metal Current Sensing Chip Resistors
【2】Chip size: 12:1206 25:2512
【3】Material Code: M:MnCu N:NiCu S:CuMnSn
【4】Power Code:1:1W 2:2W 3:3W
【5】Resistance Tolerance: F:±1%
【6】Resistance Code: R002=2mΩ R010=10 mΩ 2L50=2.5 mΩ
【7】Packaging Code: T: Tape & Reel B:Bulk Pack

Dimensions

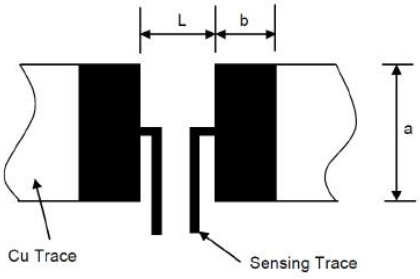


Type	Resistance (mΩ)	L (mm)	W (mm)	T (mm)	E (mm)
2512	1≤R<3	6.40±0.20	3.20±0.20	0.60±0.20	2.00±0.20
	3≤R≤10				0.90±0.20



Type	Resistance (mΩ)	L (mm)	W (mm)	T (mm)	E (mm)
1206	3≤R≤30	3.20±0.20	1.60±0.20	0.60±0.20	0.50±0.30

Recommended Land Patterns



Type	Resistance Range (mΩ)	a (mm)	b (mm)	L (mm)
2512	1≤R<3	4.00	3.10	1.80
	3≤R≤10	4.00	2.10	4.10
1206	3≤R≤30	1.80	1.70	1.60

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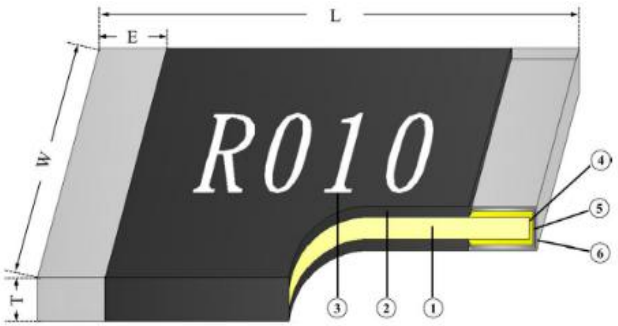
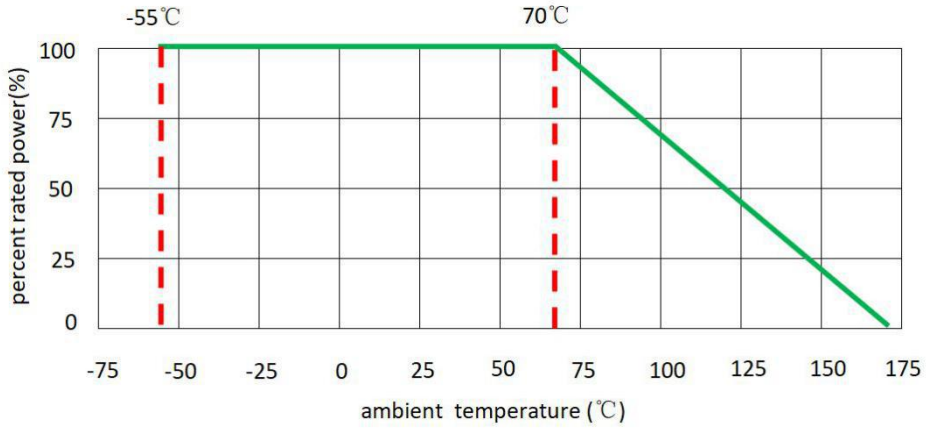
ADD.: Maqun Science & Technology Park, Qingma Road 6#, Nanjing, China
TEL.: 086-25-84354852 FAX.:086-25-83241791 Web.: www.sartfuse.com

Materials



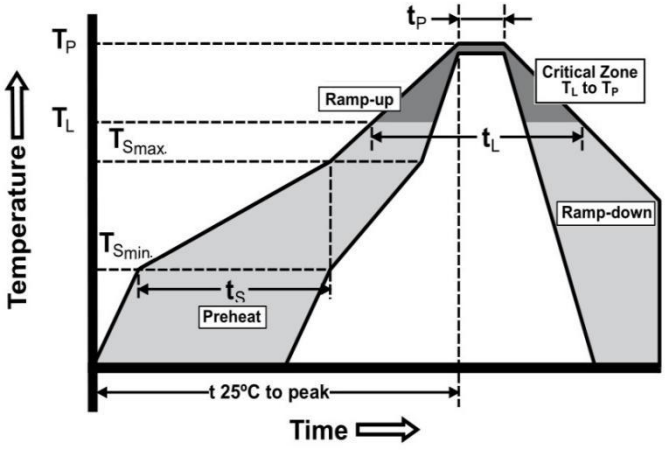
No.	Materials
1	Metal Alloy
2	Epoxy
3	Epoxy
4	Cu
5	Ni
6	Sn

Power Derating Curve



Recommended Solder Curve

1. Infrared Reflow
   - Temperature: 260℃.
   - Time: 5 sec Max.
   - Recommend Reflow profile:



Profile Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts_{max} to Tp)	3℃/sec Max.
Preheat Temperature Min.(Ts_{min}) Temperature Max.(Ts_{max}) Time(Ts_{min} to Ts_{max})	150℃ 200℃ 60sec~120sec
Peak Temperature(Tp)	260℃
Time within 5℃ of actual Peak Temperature(Tp)	5sec
Melting tin time(T_L)	20sec~30sec
Ramp-down Rate	6℃/sec Max.
Time 25℃ to peak Temperature	8 min Max.

2. Wave soldering
- Reservoir Temperature: 260℃
- Time in Reservoir: 10sec Max.

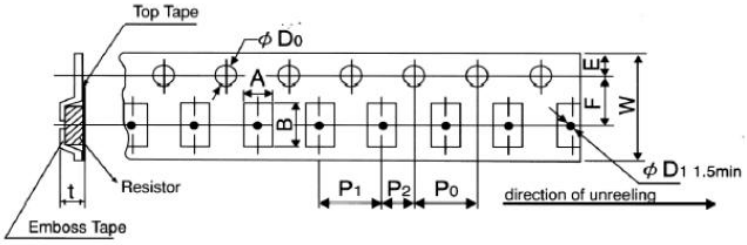
3. Hand Soldering
- Temperature: 350℃
- Time: 3sec Max.

Product Characteristics

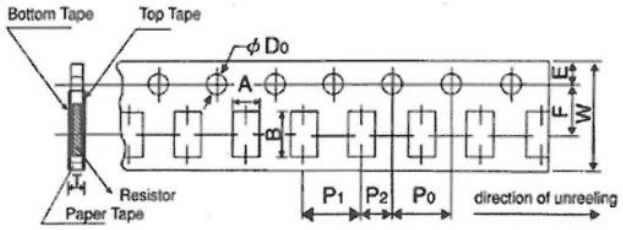
Item	Test condition/ Methods	Performance	Standard
Resistance	Measuring resistance value at room temperature 25℃ ±5℃	Refer to SART Spec	IEC60115-1 4.5
Temperature coefficient of resistance	TCR =$(R-R_0)/R_0(T2-T1)X\ 10^6$ T1 T2 Test temperature：+25℃~+125℃	Refer to SART Spec	MIL-STD-202 Method 304
Short time Overload	5 times the rated power for 5 seconds	|△R|≤±0.5%	IEC 60115-1 4.13
Resistance to Soldering Heat	260℃± 5℃，time：10 sec±1 sec	|△R|≤±0.5%	MIL-STD-202 Method 210
Thermal shock	-55℃(15min)/+125℃(15min), 300 cycles	|△R|≤±0.5%	MIL-STD-202 Method107G
Low temperature storage	-55℃ for 45 min, No power	|△R|≤±0.5%	IEC60115-1 4.23.4
High Temperature storage	125℃ for 1000 hours, No power	|△R|≤±1.0%	MIL-STD-202 Method 108
Temperature Humidity Bias Test	+85℃，85% RH，10%bias, 1000hours	|△R|≤±0.5%	MIL-STD-202 Method103
Mechanical shock	100 g's ,6 m sec, 5pulses	|△R|≤±0.5%	MIL-STD-202 Method 213
Vibration	The frequency varies from 10HZ to 2000HZ, 1 min, 3 directions, and 12 hours	|△R|≤±0.5%	MIL-STD-202 Method 204
Load life	70℃± 2℃, 1000 hours, at rated power 1.5 hours "ON", 0.5 hours "OFF"	|△R|≤±1.0%	MIL-STD-202 Method 108
Solderability	Dip the terminal in a flux and then dip into a soldering bath at 245±5℃ for 2~3 sec	Min 95% coverage	J-STD-002B Test B
Board Flex	Min 2 mm delection,60 Sec	|△R|≤±0.5%	AEC-Q200-005
ESD test	Other: 2KV, 2 times /1s	|△R|≤±1.0%	AEC-Q200-002

Packaging

1. Embossed Tape Dimensions

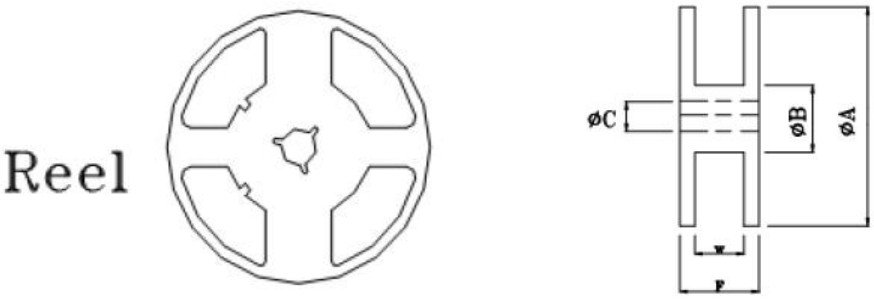


Type	A (mm)	B (mm)	W (mm)	F (mm)	E (mm)
2512	$3.60 \pm^{0.20}_{0.18}$	6.90±0.20	12.00±0.20	5.50±0.05	1.75±0.10
Type	P1 (mm)	P2 (mm)	P0 (mm)	D0 (mm)	T (mm)
2512	4.00±0.10	2.00±0.05	4.00±0.05	$1.50 \pm^{0.1}_{0.0}$	1.00±0.15



Type	A (mm)	B (mm)	W (mm)	F (mm)	E (mm)
1206	2.00±0.15	3.60±0.20	8.00±0.20	3.50±0.05	1.75±0.10
Type	P1 (mm)	P2 (mm)	P0 (mm)	D0 (mm)	T (mm)
1206	4.00±0.10	2.00±0.05	4.00±0.10	$1.50 \pm^{0.1}_{0.0}$	0.84±0.10

2. Reel Dimensions

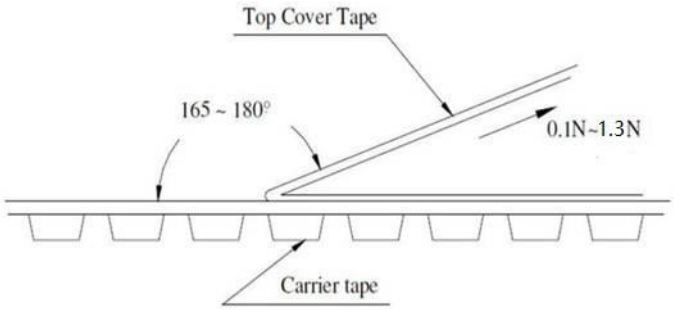


Type	φA (mm)	φB (mm)	φC (mm)	F (mm)	W (mm)
2512	178.00±2.00	60.00±1.00	13.50±0.50	15.40±1.00	13.00±0.30
1206	178.00±2.00	60.00±1.00	13.50±0.50	11.40±1.00	9.00±0.30

3. Quantity of Package

Type	1206	2512
Quantity(pcs)	5000	4000

4. Peeling Test



Storage

- The ambient temperature shall between 5℃~35℃.
- The relative humidity recommended for storage is between 25%RH~75%RH.
- Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use.
- The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.

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