INDIVIDUAL SPECIFICATION SHEET

Product Name: Current Sensing Resistors

Part Number:SME Series

Revision: A

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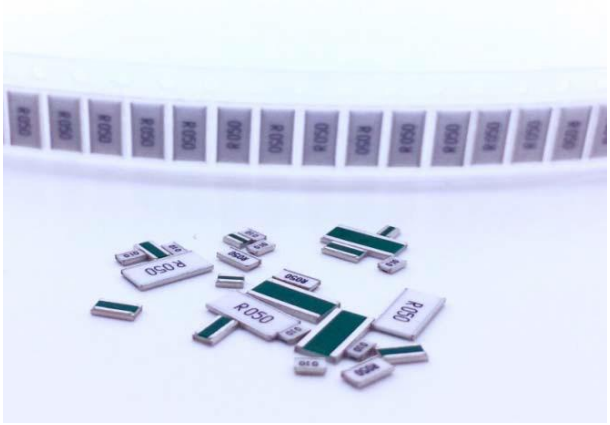
Rev.	Effective Date	Changed Contents
A	2020-4-15	New release

PREPEARED BY	APPROVED BY
杨婷	



General

- Chip size from 0805 to 2512
- Resistance value from 1mΩ to 50mΩ
- 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
0805	1	2≤R≤9	±100	±1%(F)	-55℃~+170℃
		10≤R≤50	±50	±0.5%(D) ±1%(F)	
1206	1.5	1≤R≤9	±100	±1%(F)	
		10≤R≤50	±50	±0.5%(D) ±1%(F)	
2512	3	1≤R≤9	±100	±1%(F)	
		10≤R≤50	±50	±0.5%(D) ±1%(F)	

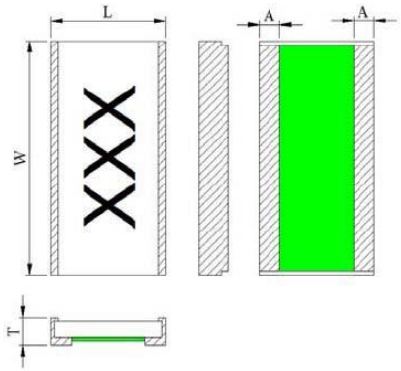
TLC Electronic

Part Number information

SME	25	A	3	F	R002	T
【1】	【2】	【3】	【4】	【5】	【6】	【7】

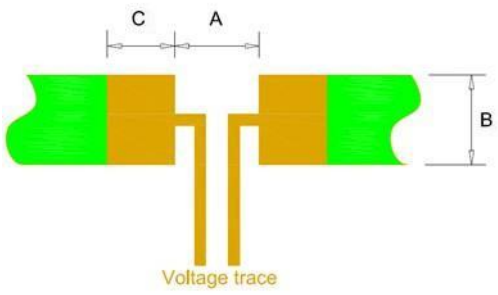
【1】Series Name: SART Metal Foil Long Electrode Type
【2】Chip size: 08:0805 12:1206 25:2512
【3】Material Code:A:Alloy
【4】Power Code:3:3W 1:1W B:1.5W
【5】Resistance Tolerance: D:±0.5% F:±1%
【6】Resistance Code: R002=2mΩ
【7】Packaging Code: T:Tape& Reel B:Bulk Pack

Dimensions



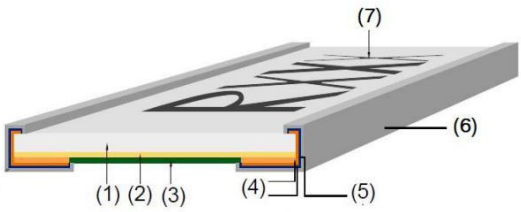
Type	Resistance (mΩ)	W （mm）	L (mm)	T （mm）	A （mm）
0805	2	2.10±0.20	1.35±0.20	0.65±0.20	0.45±0.20
	3~50	2.10±0.20	1.35±0.20	0.65±0.20	0.45±0.20
1206	1	3.30±0.20	1.70±0.20	0.65±0.20	0.55±0.30
	2~50	3.30±0.20	1.70±0.20	0.65±0.20	0.40±0.20
2512	1	6.40±0.30	3.20±0.30	0.65±0.20	0.60±0.20
	2~50	6.40±0.30	3.20±0.30	0.65±0.20	0.60±0.20

Recommended Land Patterns



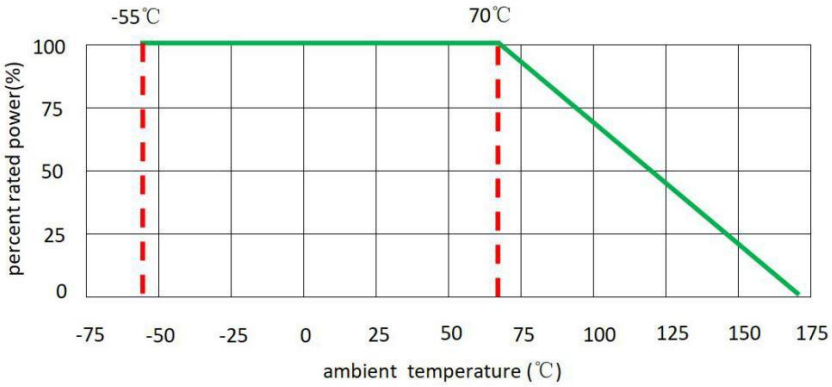
Type	Resistance (mΩ)	A (mm)	B (mm)	C (mm)
0805	2	0.60	2.30	1.10
	3~50	0.60	2.30	1.10
1206	1	0.50	3.68	1.35
	2~50	0.60	3.68	1.30
2512	1	1.40	7.25	2.35
	2~50	1.40	7.25	2.35

Materials



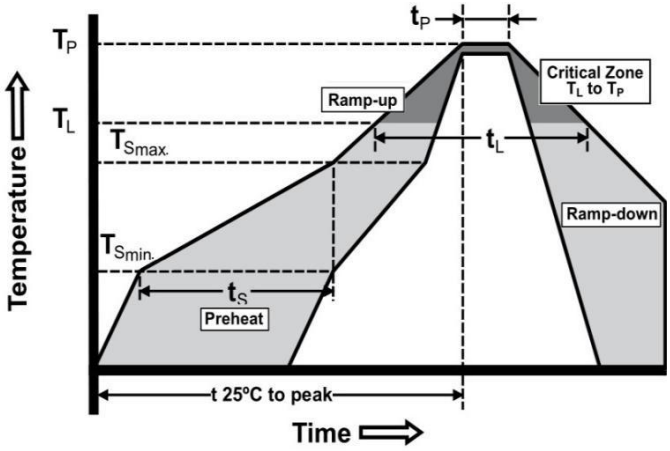
No.	Material	No.	Material
1	Ceramic substrate	5	Nickel
2	Alloy	6	Tin
3	Protective coating	7	Marking
4	Copper	/	/

Power Derating Curve



Recommended Solder Curve

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

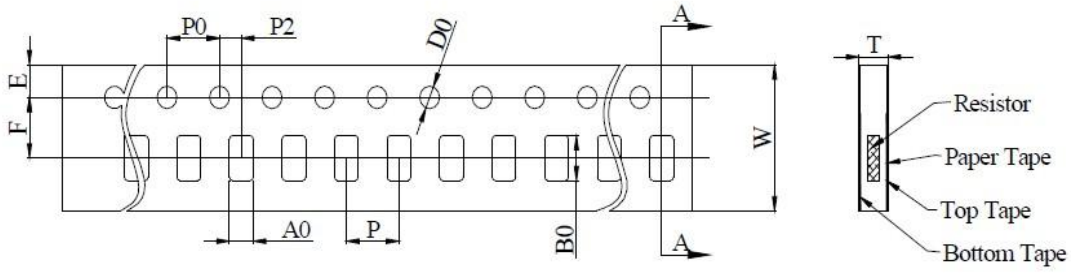
Product Characteristics

Item	Test condition / Methods	Performance	Standard
Short Time Overload	P= 2.5Pr; T=25℃±2℃ , t = 5sec	|△R|≤±(1%+0.5 mΩ)	IEC 60115-1 4.13
Temperature Coefficient of Resistance (TCR)	TCR =$(R-R_0)/R_0(T2-T1)X\ 10^6$ T1 T2 Test temperature：+25℃~+125℃	Refer to SART Spec	IEC 60115-1 4.8
Thermal Shock	-55℃(30min)/+150℃(30min), 100 cycles	|△R|≤±(1%+0.5 mΩ)	IEC 60115-1 4.19
Resistance to Solder Heat	265℃±5℃, 20sec±1sec	|△R|≤±(1%+0.5mΩ)	IEC 60115-1 4.18
Solderability	245℃±5℃, 3sec±0.5sec	95% coverage Min.	IEC 60115-1 4.17
Load Life	1000 hours at rated power, 70℃±2℃, 1.5hours “ON”, 0.5hours “OFF”	|△R|≤±(2% +0.5 mΩ)	IEC 60115-1 4.25
Moisture Load Life （60℃、95%RH）	T=60±2ºC ; RH=95% ;V_{test} = V_{max} ; t=1.5hours “ON”,0.5hours “OFF” , 1000hours	|△R|≤±(2%+0.5 mΩ)	IEC 60115-1 4.24
Bending test	Bending width 2mm, Epoxy thickness 1.6mm, Fulcrums distance 90mm	|△R|≤±(1%+0.5 mΩ)	IEC 60115-1 4.33
High Temp. Exposure	T = +170℃±2℃ ; t = 1000hours	|△R|≤±(1%+0.5 mΩ)	IEC60115-1 4.23
Low Temp. Storage	T= -55℃±2℃ ; t = 1000hours	|△R|≤±(1%+0.5 mΩ)	IEC60115-1 4.23
Mechanical Shock	a =100g`s , t =11ms, 5 times shock	|△R|≤±(1%+0.5 mΩ)	IEC60115-1 4.21

Packaging

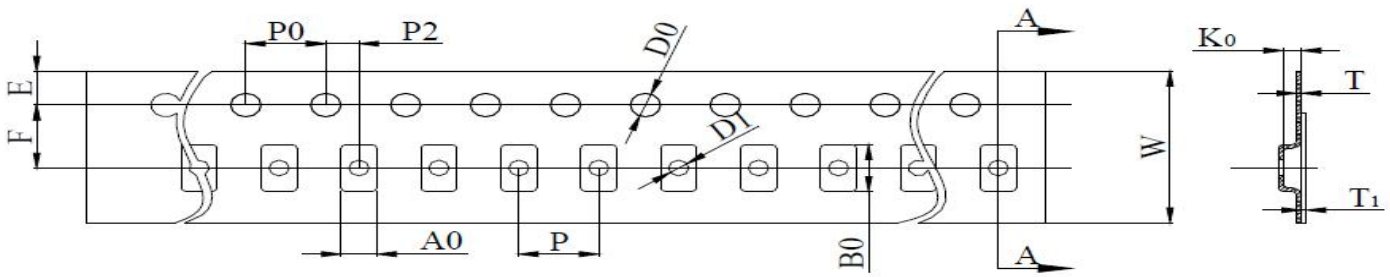
1. Embossed Tape

Dimensions For 0805



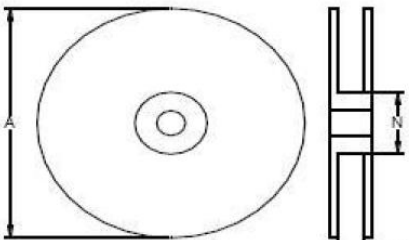
Type	A0 (mm)	B0 (mm)	W (mm)	F (mm)	E (mm)
0805	1.68±0.20	2.38±0.20	8.00±0.30	3.50±0.10	1.75±0.10
Type	P (mm)	P2 (mm)	P0 (mm)	D0 (mm)	T (mm)
0805	4.00±0.10	2.00±0.10	4.00±0.10	1.50±0.10	0.87±0.20

For 1206&2512



Type	A0 (mm)	B0 (mm)	W (mm)	F (mm)	E (mm)	P (mm)
1206	2.05±0.20	3.65±0.20	8.00±0.30	3.50±0.10	1.75±0.10	4.00±0.10
2512	3.40±0.20	6.75±0.20	12.00±0.30	5.50±0.10	1.75±0.10	4.00±0.10
Type	P2 (mm)	P0 (mm)	D0 (mm)	T (mm)	T1 (mm)	K0 (mm)
1206	2.00±0.10	4.00±0.10	1.50±0.10	0.20±0.10	0.1 Max.	0.85±0.20
2512	2.00±0.10	4.00±0.10	1.50±0.10	0.25±0.10	0.1 Max.	1.00±0.20

2. Reel Dimensions

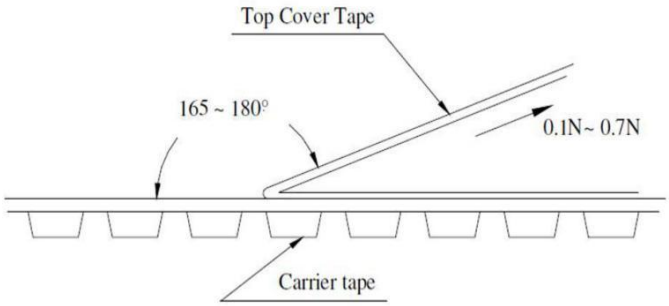


Type	A (mm)	N (mm)	W1 (mm)
0805	178.00±5.00	60.00±2.00	9.00±1.00
1206	178.00±5.00	60.00±2.00	9.00±1.00
2512	178.00±5.00	60.00±2.00	13.00±1.00

3. Quantity of Package

Type	0805	1206	2512
Quantity(pcs）	5000	5000	4000

4. Peeling Test



Storage

- The ambient temperature shall between 5℃~30℃.
- The relative humidity recommended for storage is between 25%RH~60%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.