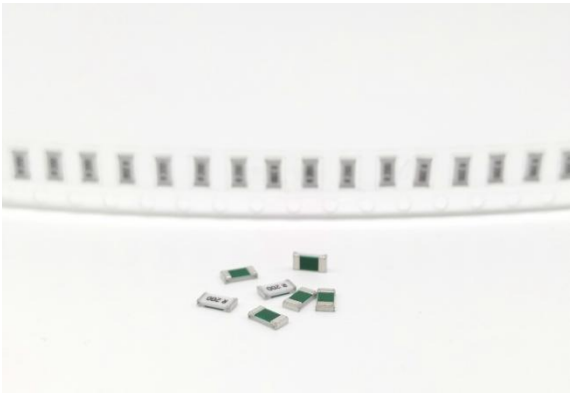


General

- Chip size from 0805 to 2817
- Resistance value from 2 mΩ to 20mΩ
- High power rating
- Low inductance 0.5nH to 5nH
- Low TCR
- Compatible with RoHS & Halogen free

Application

- Switching model power supply
- Battery pack
- Notebook, personal computer
- Test Instrument
- Power Amplifier
- AEC-Q200 qualified(1)

Electrical Specifications

Type	Power Rating at 125℃(W)	Resistance Range (mΩ)	TCR +25℃~+125℃ (ppm/℃)	Resistance tolerance	Operating Temperature
0805	0.75	3	±75	±1%(F),±1.5%(E),±2%(G)	-55℃～+170℃
		4~20	±50	±1%(F)	
1206	0.5 1.0	3	±75	±1%(F),±1.5%(E),±2%(G)	
		4~20	±50	±1%(F)	
2512	2.0	2~3	±75	±1%(F),±1.5%(E),±2%(G)	
		4~20	±50	±1%(F)	
2817	5.0	2	±50	±1%(F)	
		3~15	±30	±1%(F)	

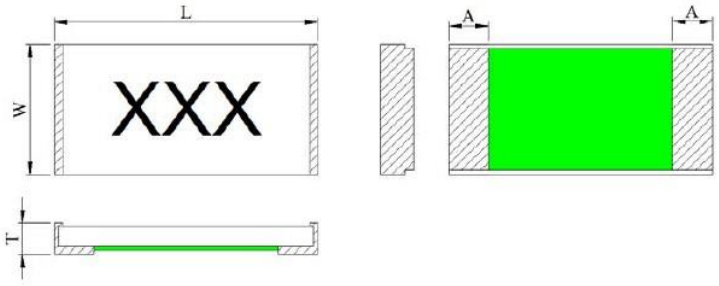
(1) Flame retardance test may not be applicable to some resistor technologies.

Part Number Information

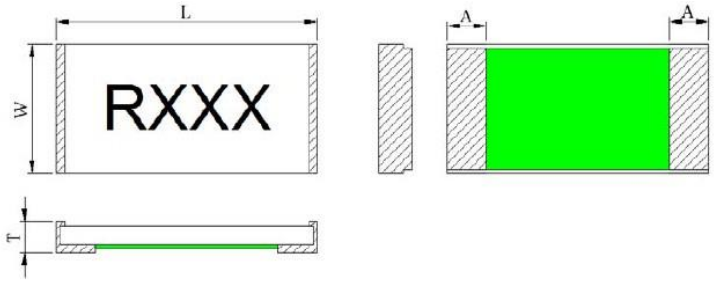
SMDA	25	A	2	F	R003	T
【1】	【2】	【3】	【4】	【5】	【6】	【7】

【1】Series Name: SART Metal Foil Type，Automotive grade
【2】Chip size: 08: 0805　12: 1206　25: 2512　28:2817
【3】Material Code: A:Alloy
【4】Power Code:A: 0.5W　C: 0.75W　1: 1W　2: 2W　5:5W
【5】Resistance Tolerance: F: ±1%　E: ±1.5%　G: ±2%
【6】Resistance Code: R002 = 2 mΩ　R020 = 20 mΩ
【7】Packaging Code: T:Tape& Reel　B: Bulk Pack

Dimensions

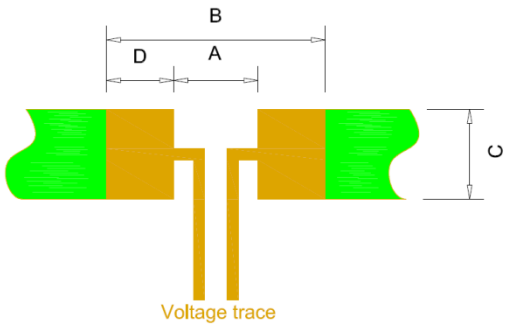


Type	Resistance Range (mΩ)	L （mm）	W (mm)	T （mm）	A （mm）
0805	3	2.10±0.20	1.35±0.20	0.65±0.20	0.65±0.20
	4~20	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20



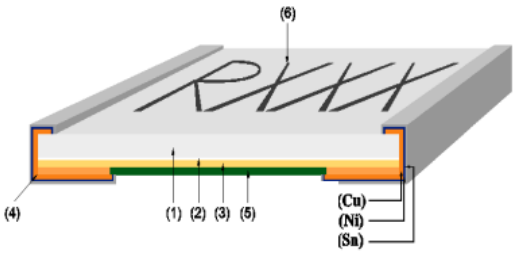
Type	Resistance Range (mΩ)	L （mm）	W (mm)	T （mm）	A （mm）
1206	3~20	3.30±0.20	1.70±0.20	0.65±0.20	0.68±0.30
2512	2	6.40±0.30	3.20±0.30	0.65±0.20	2.80±0.30
	3	6.40±0.30	3.20±0.30	0.65±0.20	2.60±0.30
	4~20	6.40±0.30	3.20±0.30	0.65±0.20	1.05±0.30
2817	2~3	7.10±0.30	4.30±0.30	0.80±0.20	2.50±0.30
	4~15	7.10±0.30	4.30±0.30	0.80±0.20	1.00±0.30

Recommended Land Patterns



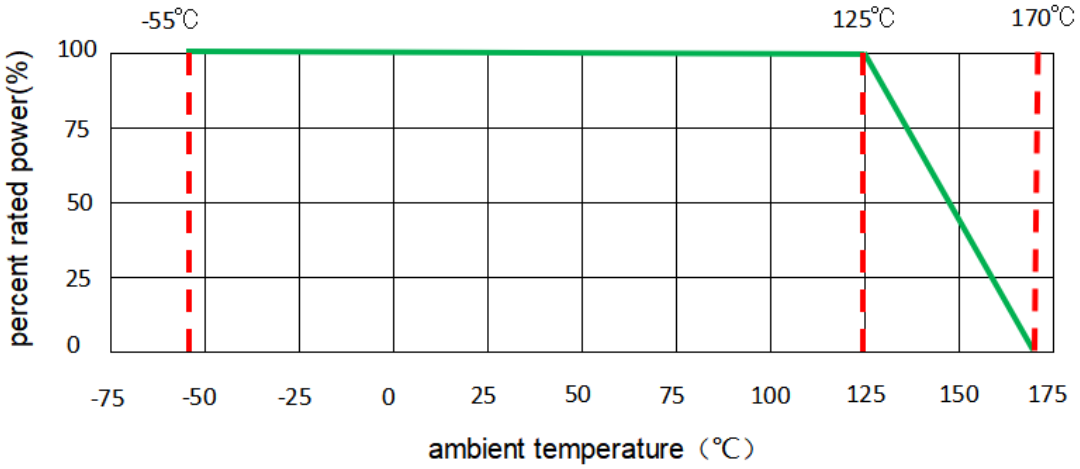
Type	Resistance Range (mΩ)	A (mm)	B (mm)	C (mm)	D (mm)
0805	3	0.50	3.60	1.44	1.55
	4~20	0.80	3.60	1.44	1.40
1206	3~20	1.20	4.80	1.84	1.80
2512	2	0.60	9.30	3.57	4.35
	3	0.90	9.30	3.57	4.20
	4~20	3.10	9.30	3.57	3.10
2817	2~3	1.50	9.10	4.80	3.80
	4~15	4.50	9.10	4.80	2.30

Materials



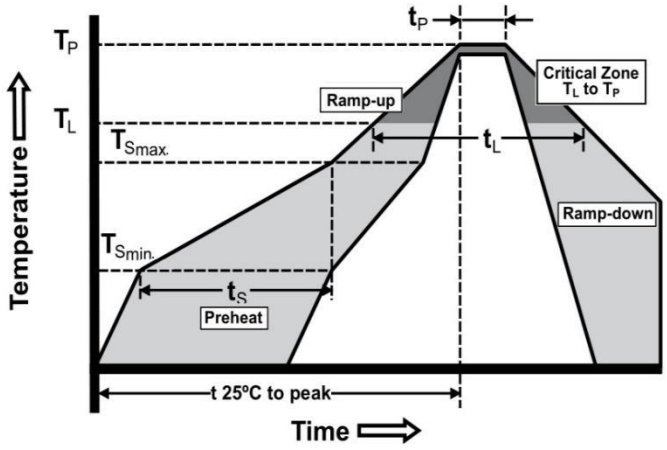
No.	Materials	No.	Materials
1	Ceramic	4	Terminal electrode
2	Epoxy	5	Coating
3	Cu-Alloy	6	Marking

Temperature Derating Curve



Recommended Solder Curve

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



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

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

3. Hand Soldering
   - Temperature: 350℃
   - Time: 5s Max.

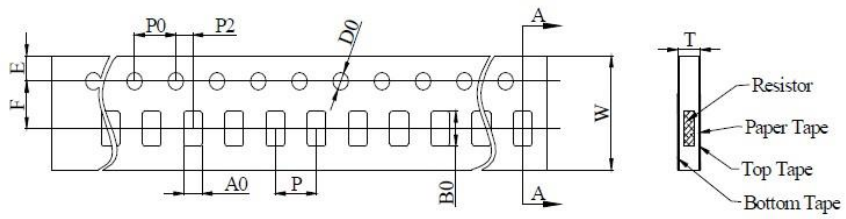
Product Characteristics

Item	Test condition / Methods	Performance	Standard
Short Time Overload	0805/1206/2512 R≤10mΩ： P= 5*Pr; T=25℃±2℃, t = 5s Rest specifications： P=2.5*Pr; T=25℃±2℃, t = 5s	|△R|≤±(1%+0.5 mΩ)	IEC 60115-1 4.13
Temperature Coefficient of Resistance (TCR)	TCR = $\frac{R-R0}{R0(T2-T1)}$X10^6 T1 T2 2817 test temperature：+25℃~+85℃ +25℃~+125℃ Rest test temperature：+25℃~+125℃	Refer to SART Spec	MIL-STD-202 Method 304
Physical Dimension	Verify physical dimensions to the applicable device detail specification. Electrical test not required.	Refer to SART Spec	JESD22 Method JB-100
Thermal Shock	-55℃(15min)/+150℃(15min),1000 cycles	|△R|≤±(1%+0.5 mΩ)	JESD22 Method JA-104
Resistance to Solder Heat	260℃±5℃, 10s ± 1s	|△R|≤±(1%+0.5mΩ)	MIL-STD-202 Method 210

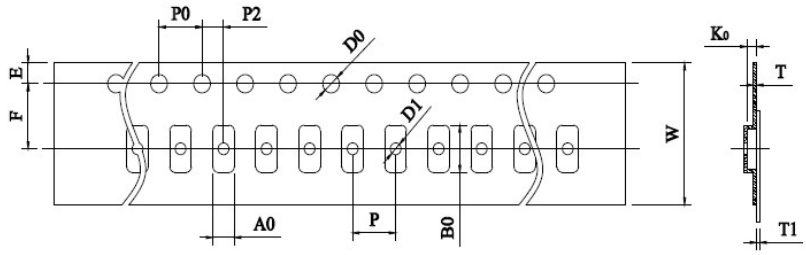
Solderability	245℃±5℃, 3.0s ± 0.5s	95% coverage Min.	J-STD-002 IEC 60115-1 4.17
Load Life	125℃± 2℃ for 1000 hours, Rated power	|△R|≤±(2% +0.5 mΩ)	MIL-STD-202 Method 108
Moisture Load Life （85℃、85％RH）	T=85℃±2℃;RH=85%;10% of rated power, 1.5hours “ON”, 0.5hours “OFF” , 1000hours	|△R|≤±(2%+0.5 mΩ)	MIL-STD-202 Method 103
Bending test	Bending width 2mm, Epoxy thickness 1.6mm, Fulcrums distance 90mm	|△R|≤±(1%+0.5 mΩ)	AEC-Q200-005
High Temp. Exposure	T = +170℃±2℃;t = 1000 hours,Unpowered	|△R|≤±(1%+0.5 mΩ)	MIL-STD-202 Method 108
Operation at Low Temperature	Rating power at -65℃ for 45 min	|△R|≤±(1%+0.5 mΩ)	IEC 60115-1 4.36
Mechanical Shock	a =100G , t =6 ms, 5 times shock	|△R|≤±(1%+0.5 mΩ)	MIL-STD-202 Method 213
Component Solvent Resistance	Immersed in three solvents after 3min ~3.5min immersion,brush wipe 10 times,a total of 3 times,washing with washing and cleaning agent,room temperature on the surface of the ventilation drying.	Clearly marked No mechanical damage	MIL-STD-202 Method 215
Vibration	Frequency：10Hz ~2000Hz acceleration：5g's for 20 min, 12 cycles each of 3 orientations	|△R|≤±(1%+0.5 mΩ)	MIL-STD-202 Method 204
Flammability	V-0 or V-1 are acceptable. Electrical test not required	-	UL-94
Terminal Strength	Appling force 17.7N for 60 s	|△R|≤±(1%+0.5 mΩ)	AEC-Q200-006

Packaging

1. Tape Packaging Dimensions

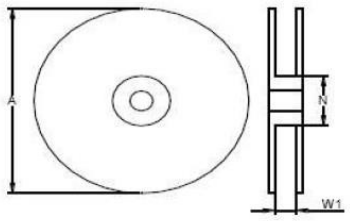


Type	A0 (mm)	B0 (mm)	W (mm)	F (mm)	E (mm)	T (mm)
0805	1.55±0.10	2.30±0.10	8.00±0.30	3.50±0.10	1.75±0.10	0.87±0.10
1206	2.05±0.20	3.65±0.20	8.00±0.30	3.50±0.10	1.75±0.10	0.87±0.10
Type	P (mm)	P0 (mm)	P2 (mm)	D0 (mm)	/	/
0805	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	/	/
1206	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	/	/



Type	A0 (mm)	B0 (mm)	W (mm)	F (mm)	E (mm)	T (mm)
2512	3.40±0.20	6.75±0.20	12.00±0.30	5.50±0.10	1.75±0.10	0.25±0.10
2817	4.60±0.20	7.50±0.20	12.00±0.30	5.50±0.10	1.75±0.10	0.25±0.10
Type	P (mm)	P0 (mm)	P2 (mm)	D0 (mm)	T1 (mm)	K0 (mm)
2512	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	0.1 Max.	1.00±0.20
2817	8.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	0.1 Max.	1.00±0.20

2. Reel Dimensions

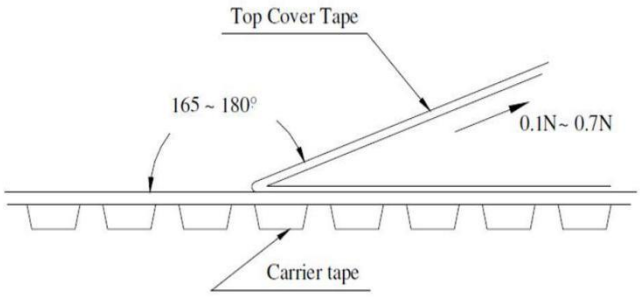


Type	A (mm)	N (mm)	W1 (mm)
0805	178.00±5.00	60.00±2.00	9.00±1.00
1206	178.00±5.00	60.00±2.00	9.00±1.00
2512	178.00±5.00	60.00±2.00	13.00±1.00
2817	178.00±5.00	60.00±2.00	13.00±1.00

Quantity of Package

Type	Quantities（PCS）
0805/1206	5000
2512	4000
2817	2000

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.