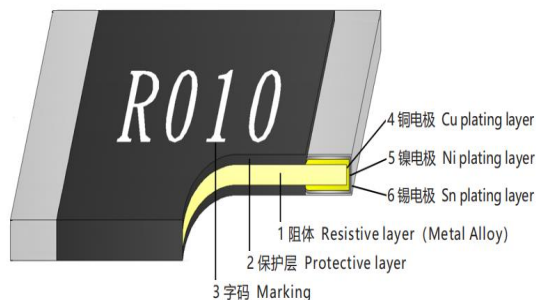




Features

Ultra-low resistance values
High power rating up to 3watts.
Excellent temperature coefficient characteristics
High Stability and High Reliability
Pb free Halogen free and RoHS compliant
The relevant provisions of the AEC-Q200.

Mechanical Data

RA1206 RA2512 RA0805 PlasticPackage
EpoxyUL:94V-0
Mounting Position: Any

Applications

Automotive electronics Current sensor
Mobile phones Computers Power supplies
Battery chargers and other fields

Making Code & information

RA	2512	F	3	R010	G	D
类型 Type	尺寸 Size	公差	额定功率	阻值	包装方式代码	大电极
RA: 合金板	1206	Tolerance	Rated Power	Resistance	Packing Code	Electrode size
式电流检测	2512	D=±0.5%	A=1/2W	value	G= reel(卷装)	
贴片电阻	0805	F=±1%	B= 1.5W	R50m=0.5mΩ	V= bulk(散料)	
(Metal Alloy		G=±2%	1= 1W	R002=2mΩ		
Current		H=±3%	2=2W	R010=10mΩ		
Sensing Chip		J=±5%	3=3W	1R5m=1.5mΩ		
Resistors)						

eg:RA2512F3R001G(D)= 2512 ±1% 3W 1mΩ 卷装 (大电极)

Marking on the Resistor's Body

±0.5%, ±1%, ±2%, ±3%, ±5% tolerance product: the marking is 4 digits, The first letter‘R’ denotes 10⁻³,The other three digitals declare resistance.

阻值 R-value	代码 Code	阻值 R-value	代码 Code	阻值 R-value	代码 Code	阻值 R-value	代码 Code
0.5mΩ	R50m	25mΩ	R025	80mΩ	R080	200mΩ	R200
1mΩ	R001	30mΩ	R030	90mΩ	R090	220mΩ	R220
1.5mΩ	1R5m	35mΩ	R035	100mΩ	R100	250mΩ	R250
2mΩ	R002	40mΩ	R040	120mΩ	R120	270mΩ	R270
3mΩ	R003	50mΩ	R050	130mΩ	R130	300mΩ	R300
5mΩ	R005	57mΩ	R057	140mΩ	R140	330mΩ	R330
10mΩ	R010	60mΩ	R060	150mΩ	R150	360mΩ	R360
15mΩ	R015	68mΩ	R068	160mΩ	R160	400mΩ	R400
20mΩ	R020	75mΩ	R075	180mΩ	R180	500mΩ	R500

Resistance Range and Electrical Characteristics

Type	Rated Power	Resistance Range	TCR (ppm/°C)	Insulation Resistance
		D(±0.5%)、F(±1%)、 G(±2%)、H(±3%)、J(±5%)		
RA1206	1W	1mΩ~100mΩ	1mΩ: ±350 2mΩ~100mΩ: ±50	>100MΩ
	1/2W	110mΩ~200mΩ	±50	
RA2512	2W 3W	0.5mΩ~500mΩ	1mΩ 大电极~4mΩ 大电极: ±50	>100MΩ
			0.5 mΩ 大电极、1mΩ: ±350	
			2mΩ~500mΩ: ±50	
RA0805	1/4W 1/2W	1mΩ	±350	>100MΩ
		2 mΩ~20mΩ:	±50	

remark: The rated current is calculated by the following formula:

$$I = \sqrt{P / R}$$

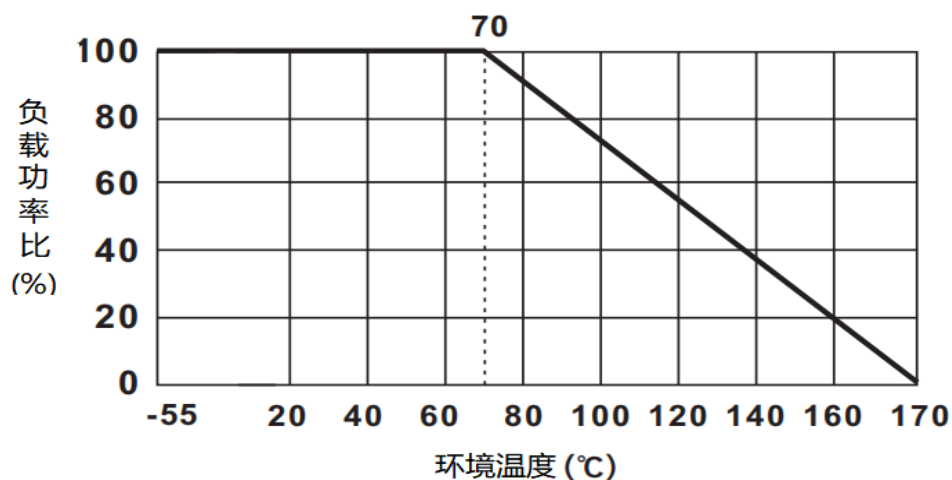
I : Rated current (A)

P : Rated Power (W)

R : Resistance (ohm)

In case the value calculated by the formula exceed the maximum working current as above table, the maximum working current shall be regarded as rated current.

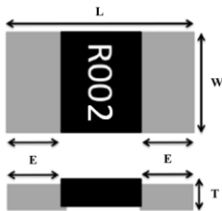
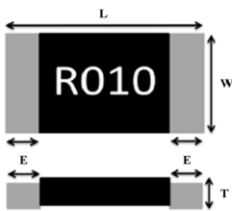
Ratings and Characteristic Curves



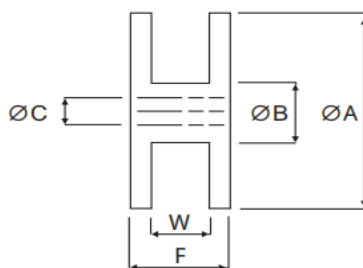
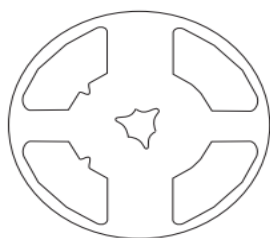
Operating Temperature Range: -55°C~+170°C.

When the resistor is operating in an ambient environment above 70 °C, the maximum load power should be reduced according to the above curve.

Package Outline Dimensions:

dimension					Unit :mm
	大电极	小电极			
Type	L(mm)	W(mm)	T(mm)	E(mm)	
RA1206	3.2±0.20	1.6±0.20	0.60±0.20	0.50±0.20	
RA2512	6.4±0.20	3.2±0.20	0.80±0.20	大电极:2.20±0.20	
				小电极:0.90±0.20	
RA0805	2.0±0.10	1.25±0.10	0.60±0.20	0.40±0.20	

Summary of Packing Options

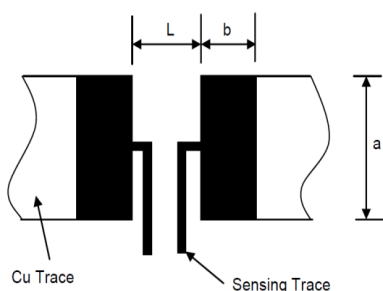


Unit :mm

Dimensions	ØA	ØB	ØC	F	W	Q'ty
RA1206	178±2.00	60.00±1.00	13.50±0.50	11.40±0.10	9.00±0.3	5000pcs
RA2512	178±2.00	60.00±1.00	13.50±0.50	15.40±1.00	13.00±0.3	4000pcs
RA0805	178±2.00	60.00±1.00	13.50±0.50	11.40±0.10	9.00±0.3	5000pcs

Recommended Solder Pad Dimension

Unit :mm



Dimensions	Resistance Range	a	b	L
RA1206	1mΩ~200mΩ	1.80	1.70	1.60
RA2512	0.5mΩ~4mΩ 大电极	4.00	3.10	1.80
	1mΩ~500mΩ	4.00	2.10	4.10
RA0805	1mΩ~20mΩ	1.40	1.20	1.40

Performance Reliability Test Methods

Test Item	Test Methods	Test Conditions	Specification
Temperature Coefficient	IEC60115-1 4.8	$TCR = (R - R_0) / (t - t_0) R_0 \times 10^6 \text{ (ppm)}$ R_0 resistance at room temperature R resistance at +125°C or +155°C t_0 room temperature t test temperature +125 °C or +155°C	Please refer to the Spec.
High Temperature Exposure	MIL-STD-202 Method 108	1000 hrs. @T=125°C. Measure the variation of resistance at 24±4 hours after test conclusion. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Low Temperature operation	IEC60115-1 4.23.4	45 min. @T=-55 °C. Measure the variation of resistance after test conclusion. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Temperature cycling	JESD22 Method JA-104	1000Cycles (-55°C to +125°C) Measurement at 24±4 hours after test conclusion. Measure the variation of resistance at 24±4 hours after test conclusion. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Short-time overload	IEC60115-1 4.13	Applied 5.0 times of rated power for 5 second. Measure the variation of resistance. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Biased Humidity	MIL-STD-202 METHOD 103	1000 hours 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24±4 hours after test conclusion. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Operational life	MIL-STD-202 METHOD 108	Put the specimen in a chamber at 70±2 °C temperature , and applied rated currernt for 1.5H and rested for 0.5H repeatedly till total test time is 1000 ^{+48/-0} h. Measure the variation of resistance. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Solderability	J-STD-002B test B	Dip the terminal in a flux and then dip into a soldering bath at 245±5°C for 2~3sec.	Min 95% coverage
Resistance to soldering heat	IEC60115-1 4.18	Dip the terminal in a flux and then dip into a soldering bath at 260±5°C for 10±1sec. Measure the variation of resistance. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Mechanical Shock	MIL-STD-202 METHOD 213	100g's , Normal duration is 6ms , half sine shock pulse .Measure the variation of resistance. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Resistance to vibration	MIL-STD-202 METHOD 204	5g's for 20min.12cycles, 10-2000Hz . Measure the variation of resistance. $\Delta R\% = \frac{R_2 - R_1}{R_1} \times 100\%$	< ±1%
Terminal Bending	AEC-Q200-005	Min 2mm deflection ,60sec. Measure the variation of resistance. Measure the variation of resistance.	< ±1%
Terminal Strength	AEC-Q200-006	Applied a 17.7N (1.8Kg) for 60±1seconds.	< ±1%
Thermal shock	MIL-STD-202 METHOD 107	use -55/+125°C, Number of cycles is 300. Devices mounted. Maximum transfer time is 20 seconds.Dwell	< ±1%
ESD test	AEC-Q200-002	2KV, 2times/1s	< ±1%

R1 = resistance before test

R2 = resistance after test