

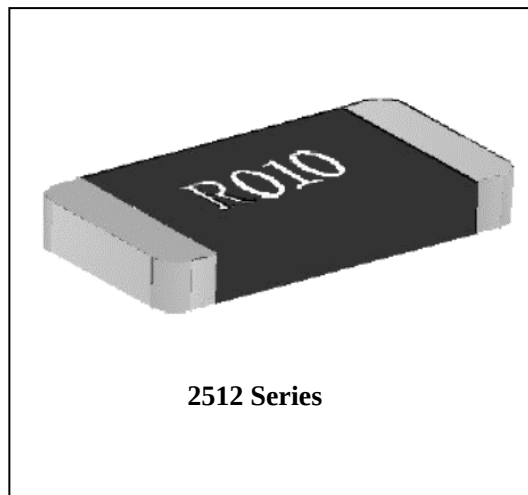
Metal Alloy Low Resistance Chip Resistor AD2512 Series

Application

- ◆ Entertainment product
- ◆ Power supply
- ◆ Measuring instrument
- ◆ Industrial product
- ◆ Battery management system

Features

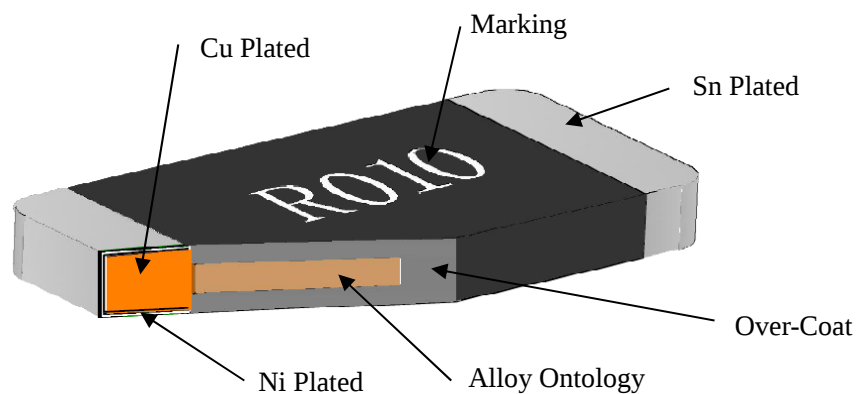
- ◆ Low Resistance / Low TCR
- ◆ Excellent long term stability
- ◆ High precision current sensing and voltage division.
- ◆ These Devices are Pb-Free and are RoHS Compliant



Explanation Of Part Numbers:

AD	2512	20	F	R001
ADVANCED				Resistance: R001=1mΩ, R003=3mΩ R010=10mΩ
Size(Inch):2512				Tolerance:F=±1%,J=±5%
Rated Power : 20=2W, 30=3W				

Structural Drawing:



Standard Electrical Specifications

TYPE	Rating Power at 70°C	T.C.R (ppm/°C)	Max. Rating Current	Max. Overload Current	Resistance Range(mΩ)	Material	Operating Temperature Range(°C)
					F:1%,J:5%		
AD2512	2W	≤±50	44.72	100.00	11-50	FeCrAl	-55~170°C
	3W	≤±50	54.77	109.54	5-10	FeCrAl	
	3W	≤±50	54.77	109.54	3-4	FeCrAl	
	3W	≤±100	54.77	109.54	1-2	MuCu	
	3W	≤±200	77.45	154.91	0.5	MuCu	

Performance Characteristics

FIG.1: Surface Temperature Curve

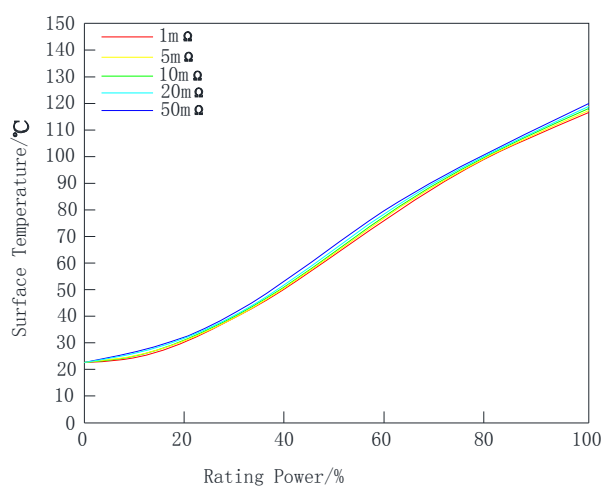


FIG.2: T.C.R Derating Curve

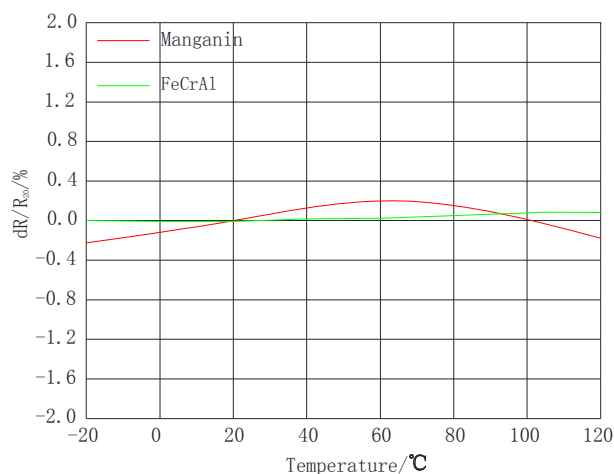
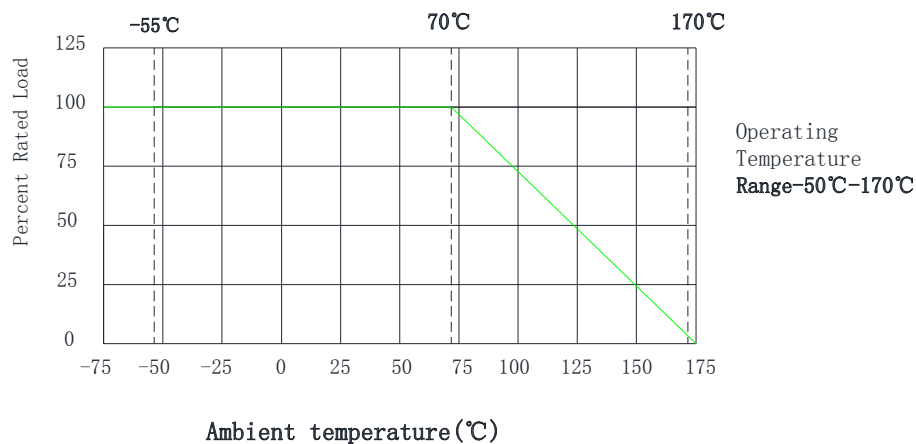


FIG.3: Derating Curve



Note: Surface temperature rise test boards use aluminum substrate

Rating Current

The following equation may be used to determine the DC (Direct Current) or AC (Alternating Current) (RMS, root mean square value) of normal rated power. However, if the result value exceeds the highest current of regulated standards (paragraph 7), the highest normal rated power is to be used.

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

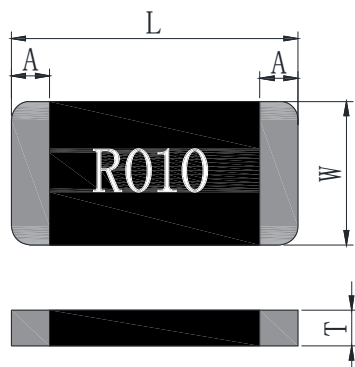
I = Rating current (A)
 P= Rating Power (W)
 R= Resistance(Ω)

Reliability test and requirement

Test Item	Specifications	Test Methods
Solderability	95%Cover Min	IEC60115-14.17 Lead-free solder bath at 245°C±5°C for 3s±0.3s
T.C.R	Withinspecified T.C.R	IEC60115-14.8 20°C -120°C
RapidChangeof Temperature	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.19 -55°C (30min) ~normal temperature(5min) ~125°C (30min)100 cycles.
Resistanceto SolderingHeat	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.18 Lead-free solder bath at 260°C±5°C for 10s±1s.
Shorttimeoverload	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.13 2W:Rated powerX4 for 5 seconds; 3W:Rated powerX3 for 5 seconds.
SubstrateBending Test	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.33 (Bending Distance):2mm (duration):60s±5s
DampHeat SteadyState	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.24 40°C±2°C, 93%±3%RH, 1000 hours, Rated current or limiting elementcurrentwhicheverislower1.5hON0.5hOFF.
Endurance at 70°C	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.25.1 70°C±2°C, 1000h, Rated current or limiting element curret whicheverislower1.5hON0.5hOFF
EnduranceatUpper CategoryTemperature	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.25.3 170°C±2°C, 1000h
Component SolventResistance	Nomechanicaldamage ΔR≤±1.0%R	IEC60115-14.29 Iso-propyl alcohol(IPA), 23°C±5°C, 10h

PACKAGE MECHANICAL DATA

2512 Package Dimension

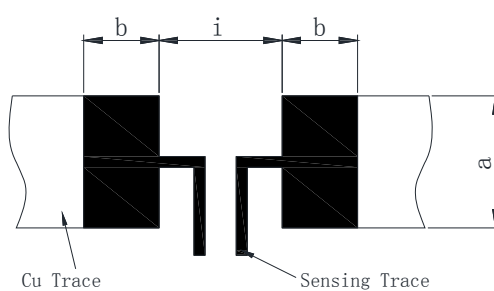


TYPE	Power Rating	Resistance Range(mΩ)	Dimensions In Millimeters			
			A	L	W	T
AD2512	2W	11-50	0.85±0.2	6.4±0.2	3.2±0.2	0.8±0.15
	3W	5-10	0.85±0.2			
	3W	3-4	1.5±0.2			
	3W	1-2	1.5±0.2			
	3W	0.5	1.72±0.2			

Marking Format

- All the other products marking are 4 digits.
- “R” designates the decimal location in ohms
e.g. 1mΩ the product marking is R001.
25mΩ the product marking is R001.
100mΩ the product marking is R001.
- “m” designates the decimal location in milli-ohms
e.g. 0.25mΩ the product marking is 0m25.
0.5mΩ the product marking is 0m50.
5.5mΩ the product marking is 5m50.
25.5mΩ the product marking is 25m5.

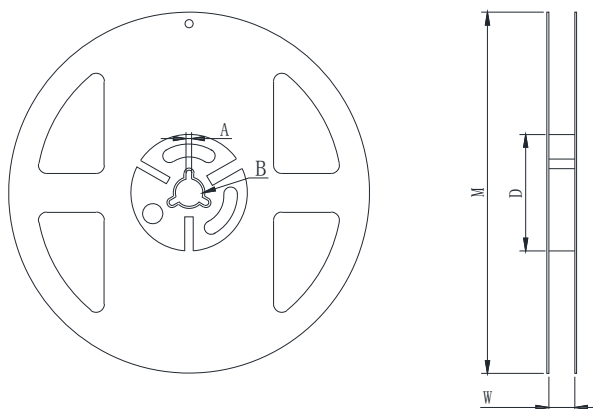
Recommend Land Pattern Design



TYPE	Power Rating	Resistance Range(mΩ)	Dimensions In Millimeters		
			a	b	i
AD2512	2W	11-50	3.70	1.90	3.60
	3W	5-10	3.70	1.90	3.60
	3W	3-4	3.70	2.30	2.8
	3W	1-2	3.70	2.30	2.8
	3W	0.5	3.70	2.30	2.8

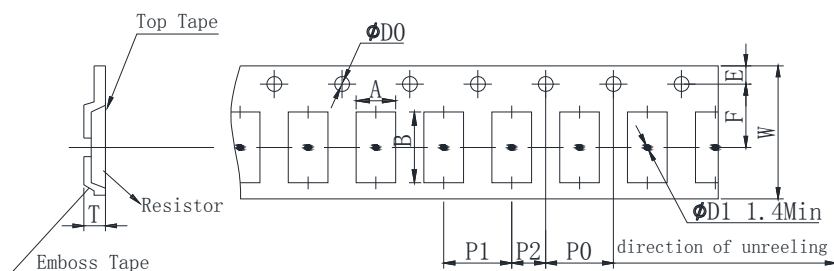
Packaging Information

● Reel Dimensions(Unit: mm)



Reel Type	A	W	M	B	D	Quantity(EA)
7" reel for 12 mm embossed	2.0±0.5	12.3±0.5	178±2.0	13.5±0.5	60.0±0.5	4000pcs

● Embossed Dimensions(Unit: mm)



Type	A	B	W	E	F	P0	P1	P2	ØD0	T
AD2512	3.5	6.8	12	1.75	5.5	4	4	2	1.5	1.2

● Lable

ADVANCED CORPORATION Ltd.

PART NO: AD251230FR010

RESISTANCE: R010 Ω 1%

WATTAGE: 3W SIZE: 2512

QUANTITY: 4000 PCS

LOT NO:H203210503

