

Metal Alloy Low-Resistance Resistor

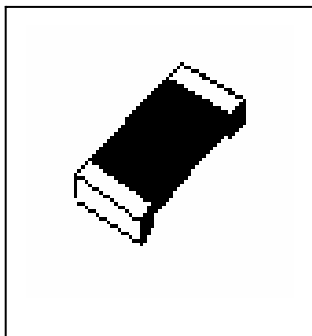
TYPE: LR2512 1W Series

SPECIFICATIONS

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Metal Alloy Low-Resistance Resistor

Product Specification: LR2512 1W Type



FEATURES :

- ◆ Ideal for all types of current sensing, voltage division and Pulse applications including switching and linear power Supplies, Instruments, power amplifiers.
- ◆ Proprietary processing technique produces extremely low Resistance values.
- ◆ High-temperature performance (up to +275°C)
- ◆ Very low inductance 0.5nH to 5nH
- ◆ Excellent frequency response
- ◆ Low thermal EMF (<1uV/°C)
- ◆ Lead(Pb)-free construction is RoHS-compliant

1. Standard Electrical Specifications :

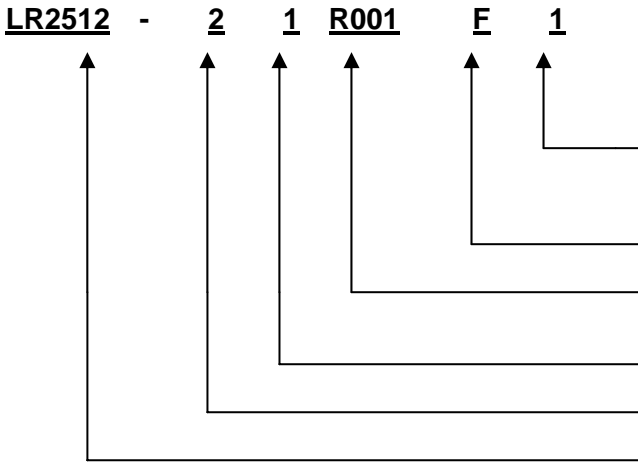
Model	Power Rating at 100 °C (Watts)	Resistance Range mΩ		
		0.5%(D)	1.0%(F)	5.0%(J)
LR2512-21	1.0	7~100	0.5~100	0.5~100

1 Watts with total solder pad trace size of 100mm²

2. Technical Specifications :

Parameter	Unit	LR2512-21 (mΩ)
Temperature Coefficient	ppm /°C	0.5~3= +50
		4~6.9= -25
		7~100= -15
Operating Temperature Range	°C	-65 ~ + 275
Maximum Working Voltage	V	$(P \times R)^{1/2}$

Ordering Information :



Packing

1=Tape & Reel ; B=Bulk Pack
1=1,000 Pcs

Tolerance

D=±0.5% ; F=±1.0% ; J=±5.0%

Resistance

EX : R001=1mΩ ; R010=10mΩ

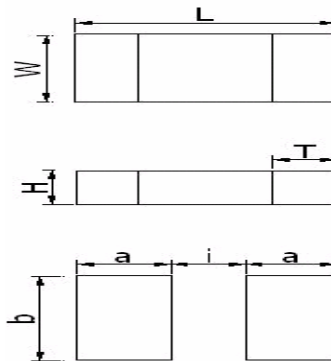
Power Rating (Watts)

Number of Terminals

Model (Size)

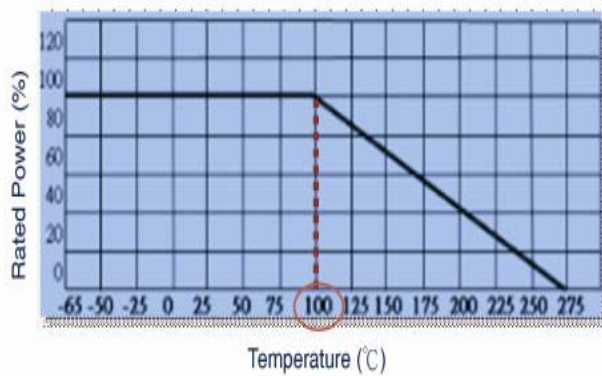
3. Dimensions :

LR2512-2



Model	DIMENSIONS - in inches (millimeters)				
	Resistance Range mΩ	L	W	H	T
LR2512-21	0.5 ~ 4	0.246±0.010 (6.25±0.254)	0.13±0.010 (3.30±0.254)	0.031±0.010 (0.80±0.254)	0.074±0.010 (1.88±0.254)
	5 ~ 100	0.246±0.010 (6.25±0.254)	0.13±0.010 (3.30±0.254)	0.031±0.010 (0.80±0.254)	0.044±0.010 (1.13±0.254)
Model	SOLDER PAD DIMENSIONS - in inches (millimeters)				
	Resistance Range mΩ	a	b	i	
LR2512-21	0.5 ~ 4	0.120(3.05)	0.145(3.68)	0.050(1.27)	
	5 ~ 100	0.083(2.11)	0.145(3.68)	0.125(3.18)	
Remark : 1 Watts with total solder pad trace size of 100 mm ²					

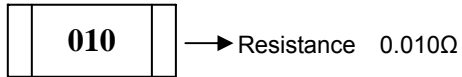
4. Power Derating Curve :



5. Performance :

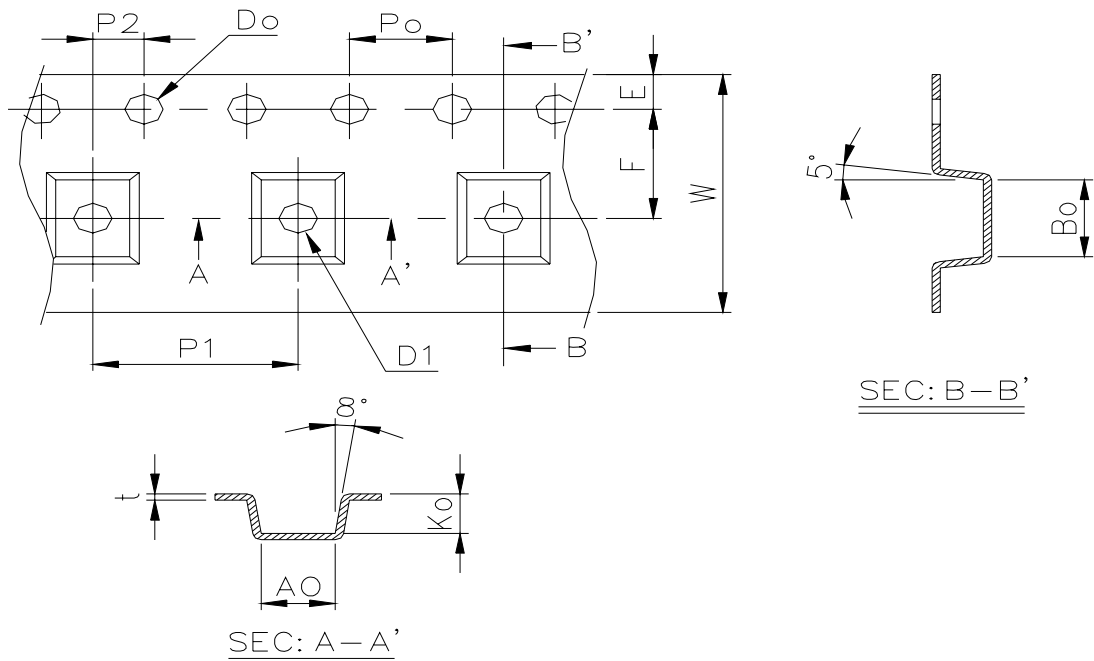
Test Item	Conditions of test	Test Method	Test Limits
Short Time Overload	1W 5x rated power for 5 seconds	JIS C5202 5.5	$\pm(0.5\%+0.0005\Omega)\Delta R$
Resistance to Solder Heat	Solder temp./immersion time: $260\pm 5^{\circ}\text{C}$, $10\pm 1\text{secs}$ and $350\pm 10^{\circ}\text{C}$, $3.5\pm 0.5\text{secs}$	JIS C5202 6.4	$\pm(0.5\%+0.0005\Omega)\Delta R$
Solderability test	Steam aging: 4 hrs, cool down 30 minutes then test	JIS C5202 6.5	95% coverage
Vibration	Frequency varied 55Hz in one minute , 3 directions , 12 hours	JIS C5202 6.7	$\pm(0.5\%+0.0005\Omega)\Delta R$
Resistance to solvent	Immersion time: $60\pm 5\text{secs}$, $20^{\circ}\text{C} \sim 25^{\circ}\text{C}$	JIS C5202 6.9	$\pm(0.5\%+0.0005\Omega)\Delta R$
Mechanical Shock	100 grams for 6 milliseconds, 5 pulses	JIS C5202 6.13	$\pm(0.5\%+0.0005\Omega)\Delta R$
Low Temperature Storage	-55°C for 1000 hours	JIS C5202 7.1	$\pm(0.5\%+0.0005\Omega)\Delta R$
High Temperature Exposure	1000 hours @ $+ 155^{\circ}\text{C}$	JIS C5202 7.2	$\pm(1.0\%+0.0005\Omega)\Delta R$
Thermal Shock	$- 55^{\circ}\text{C}$ to $+ 125^{\circ}\text{C}$, 1000 cycles , 15 minutes at each extreme	JIS C5202 7.4	$\pm(0.5\%+0.0005\Omega)\Delta R$
Moisture Resistance	Mil-STD-202 , Method 106 , 0% power , 7a and 7b not required	JIS C5202 7.6	$\pm(0.5\%+0.0005\Omega)\Delta R$
Bias Humidity	$+ 85^{\circ}\text{C}$, 85% RH, 10% Bias, 1000 hours, 90 minutes "ON", 30 minutes "OFF"	JIS C5202 7.9	$\pm(0.5\%+0.0005\Omega)\Delta R$
Load Life	1000 hours @ rated power, $+ 100^{\circ}\text{C}$, 1.5 hours "ON" , 0.5 hours "OFF"	JIS C5202 7.10	$\pm(1.0\%+0.0005\Omega)\Delta R$

6. Marking :



7. Packaging :

Model	Reel			
	Tape Width	Diameter	Pieces/Reel	Code
LR2512	12mm/Embossed Plastic	178mm/7"	1,000	1



Unit: mm

Item	W	P1	E	F	Do	D1	P0	Po*10	P2	Ao	Bo	Ko	t
Spec.	12.00	8.00	1.75	5.50	1.50	1.50	4.00	40.00	2.00	3.90	6.74	1.08	0.24
Tole.	±0.10	±0.10	±0.10	±0.05	+ 0.10 - 0.00	±0.10	±0.05	±0.10	±0.05	±0.10	±0.10	±0.05	±0.05