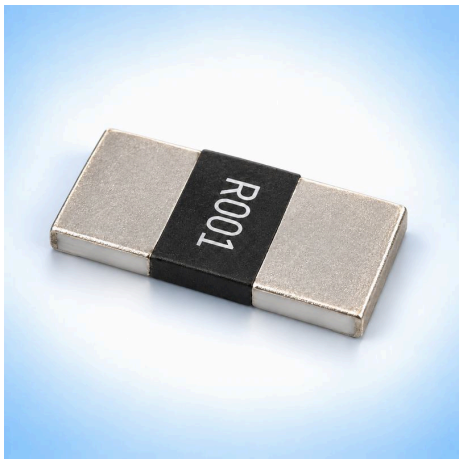
2512

Metal Alloy Chip Resistors

Features



- Low-resistance alloy resistor for surface mounting.
- Complies with RoHS requirements.
- Conforms to automotive AEC-Q200 tests.
- Parasitic inductance ≤5 nH.

Type designation

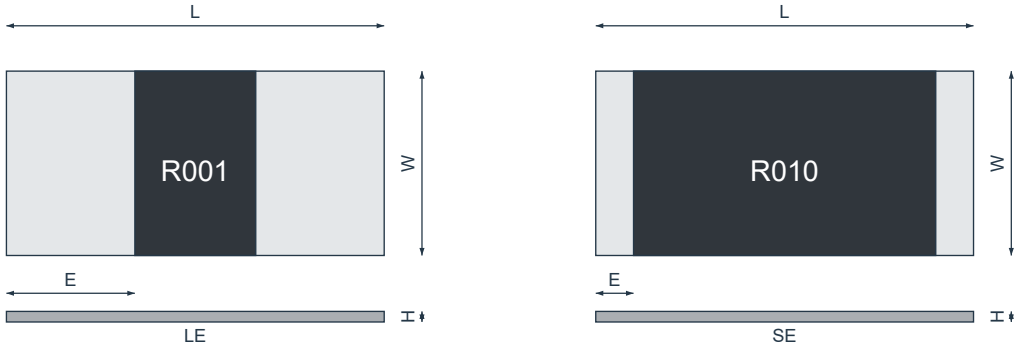
Size	Type	Rated power	Tolerance	Resistance range
2512	LE (large electrode)	2W/3W	<0.45mΩ	R000
2512	LE (large electrode)	2W/3W	D:0.5% F:1% G:2% J:5%	R0005≤R≤R004
2512	SE (small electrode)	3W/4W	D:0.5% F:1% G:2% J:5%	R001≤R≤R020
2512	SE (small electrode)	2W/3W	D:0.5% F:1% G:2% J:5%	R001≤R≤R220
2512	SE (small electrode)	2W	D:0.5% F:1% G:2% J:5%	R220<R≤R500

Ordering code

Manufacturer	Size	Type	Power	Resistance	Tolerance	Quantity
INLANX	2512	LE (large electrode) SE (small electrode)	2W/3W/4W	R001 R002 ……	0.5%=D 1%=F 2%=G 5%=J	2512 (4)

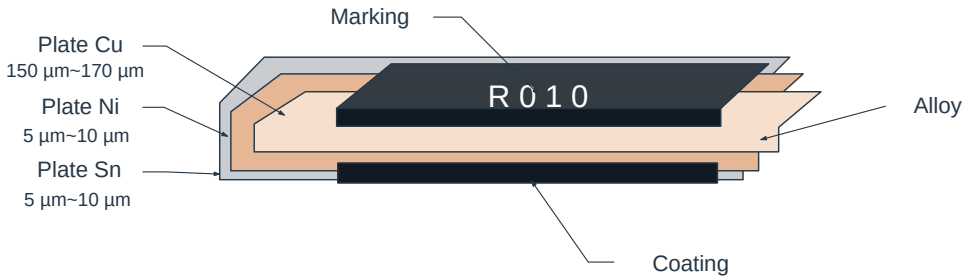
Example: INLANX2512LE3WR001F4

Construction and dimensions (mm)



Size	Type	Symbol	Dimension (mm)	Resistance
2512	LE	L	6.4±0.2	-
2512	LE	W	3.2±0.2	-
2512	LE	E	2.2±0.2	-
2512	LE	H	0.8±0.08	-
2512	SE	L	6.4±0.2	-
2512	SE	W	3.2±0.2	-
2512	SE	E	1.0±0.2	-
2512	SE	H	0.8±0.08	-

Internal layer structure

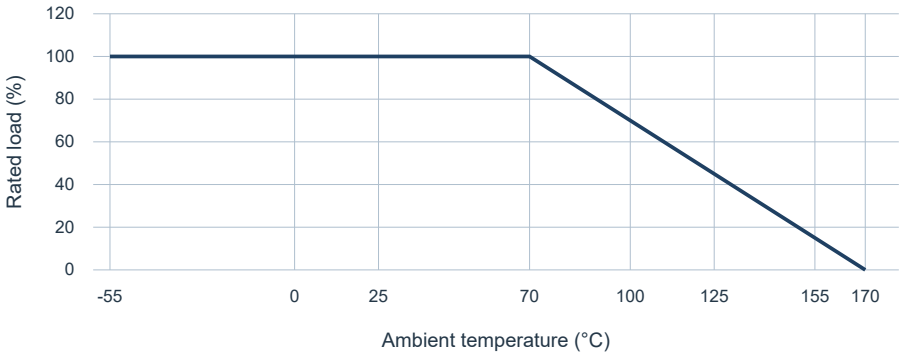


Copper plating: 150-170 μm; nickel: 5-10 μm; tin: 5-10 μm.

Electrical specifications

Type	Power	Resistance	Alloy	TCR ppm/°C	Operating temp.	Tolerance	Insulation	Max. voltage V
LE	2W/3W	R<0.2mΩ	Copper	/	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
LE	2W/3W	0.5mΩ≤ R<1mΩ	MnCu	± 350ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
LE	2W/3W	1mΩ≤R≤ 4mΩ	MnCu	±50ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W/3W /4W	1mΩ≤R≤ 1.5mΩ	MnCu	± 350ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W/3W /4W	2mΩ≤R≤ 20mΩ	MnCu	±50 ppm/ °C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W/3W	20mΩ<R≤ 150mΩ	MnCu	±50 ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W/3W	150mΩ<R ≤220mΩ	CuNi	±50 ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W	220mΩ<R ≤400mΩ	CuNi	±50 ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½
SE	2W	400mΩ<R ≤500mΩ	Kama	±50 ppm/°C	-55°C~ +170°C	D:0.5% F:1% G:2% J:5%	Over 100MΩ	(P*R)½

Power derating



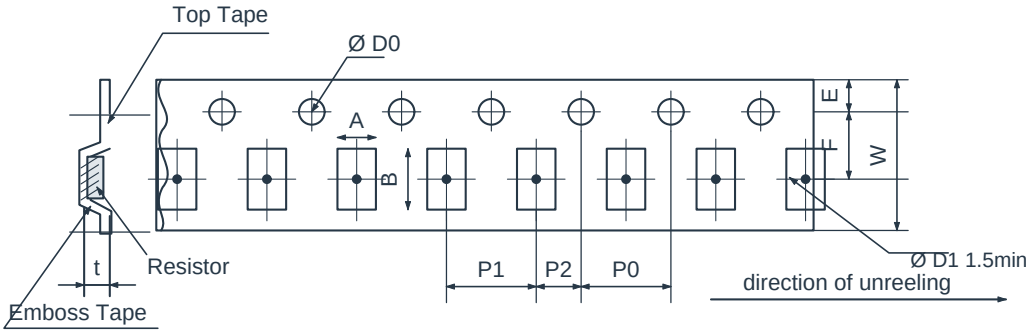
100% rated power at and below 70°C; linear derating above 70°C to zero at 170°C.

Reliability tests

Reference: IEC 60115, IEC 60068 and JIS-C 5201-1.

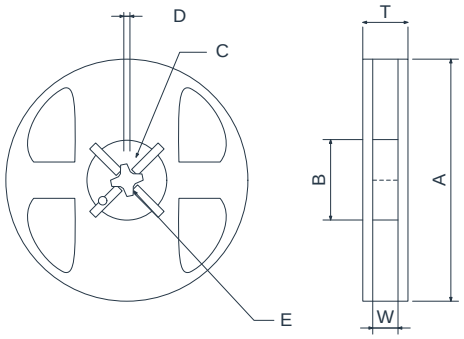
Test	Conditions / method	Requirements
Temperature coefficient	Measure at 25°C and 125°C; TCR=(R2-R1)/(R1×(T2-T1))×10^6.	Refer to electrical TCR specification
Short-time overload	5 times rated power for 5 s. Maximum 200 A for R000.	ΔR≤±(1%+0.05mΩ)
Insulation resistance	Apply 100±15 V DC between electrodes and substrate for 60 s.	>100 MΩ
Withstand voltage	Apply AC with RMS value equal to maximum overload voltage between electrodes and substrate, ramping at about 100 V/s; hold for 60±5 s.	No breakdown or arcing
Solderability	Solder bath at 245±5°C for 2±0.5 s.	Electrode solder coverage >95%
Soldering heat	Solder bath at 270±5°C for 10±1 s.	ΔR≤±(0.5%+0.05mΩ); no visible damage
Bending	Bend by 2 mm; hold for 60±5 s.	ΔR≤±(0.5%+0.05mΩ); no mechanical damage
Solvent resistance	Isopropanol (IPA), 23±5°C for 10 h.	No visible damage
High-temperature exposure	170±2°C for 1000 h; measure after resting for 1 h.	ΔR≤±(1%+0.05mΩ)
Low-temperature exposure	-55±2°C for 1000 h; measure after resting for 1 h.	ΔR≤±(0.5%+0.05mΩ)
Temperature cycling	-55°C for 30 min → room temperature for 5 min → 155°C for 30 min; 1000 cycles.	ΔR≤±(0.5%+0.05mΩ)
Load life	70±2°C, rated power, 1.5 h ON / 0.5 h OFF for 1000 h.	ΔR≤±(1%+0.05mΩ)
Moisture with load	85±2°C, 85±3% RH, rated power, 1.5 h ON / 0.5 h OFF for 1000 h.	ΔR≤±(1%+0.05mΩ)

Carrier tape dimensions (mm)



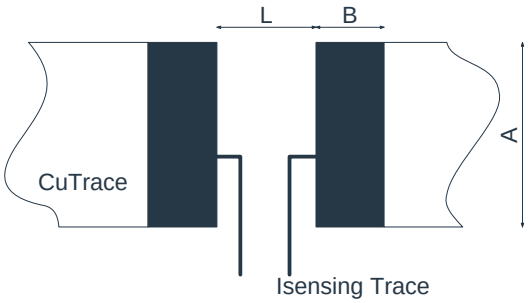
A	B	W	F	E	P1	P2	P0	D0	t
3.5±0.15	6.8±0.1	12.0±0.2	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.05	1.5~1.6	1.0±0.1

Reel dimensions (mm)



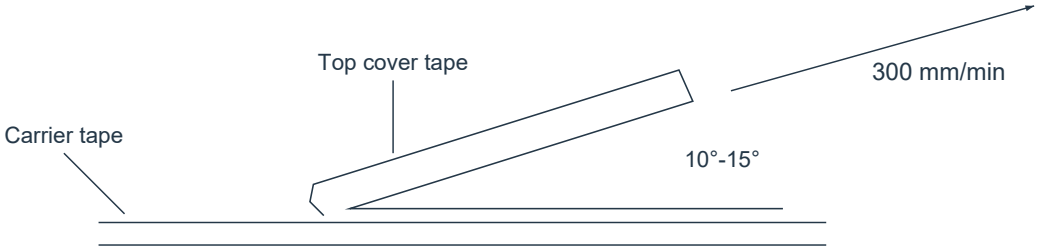
Size	A	B	C	D	E	T	W
Reel	178±2.0	60±1.0	13±1.0	2.0±0.5	>22	15.4±0.5	13.3±0.5

Recommended solder pads (mm)



Type	A	B	L
SE	4.0	2.1	4.1
LE	4.0	3.1	1.3

Cover tape peel force



Top cover tape peel speed: 300 mm/min; angle: 10°-15°; peel force: 0.1-0.7 N.

Storage and handling

Store at 5-35°C and 45-75% RH. Storage life: 1 year.

Avoid prolonged direct sunlight, moisture, dust and gases that impair solderability, including hydrogen chloride, sulfurous acid gas and hydrogen sulfide.