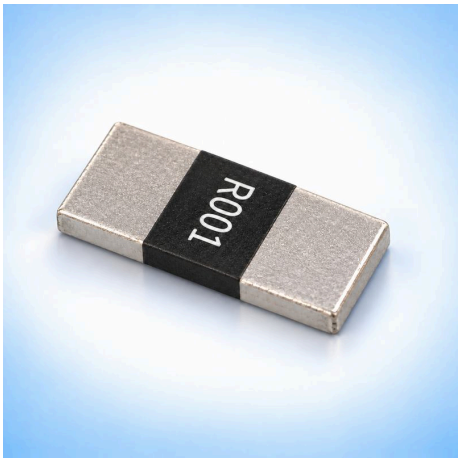
2010

Metal Alloy Chip Resistors

Features

- Low-resistance alloy resistor for surface mounting.
- Complies with RoHS requirements.
- Conforms to automotive AEC-Q200 tests.



Type designation

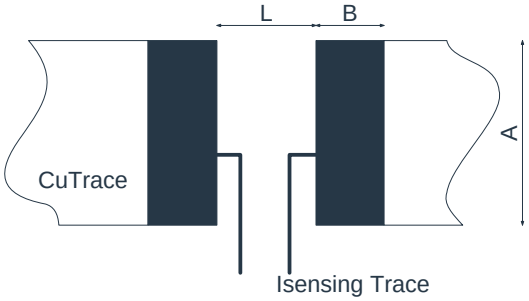
Size	Type	Rated power	Tolerance	Resistance range
2010	LE (large electrode)	1.5W	F:1% G:2% J:5%	R002~R003
2010	SE (small electrode)	1.5W	F:1% G:2% J:5%	R004~R050
2010	SE (small electrode)	1W	F:1% G:2% J:5%	R004~R050

Ordering code

Manufacturer	Size	Type	Power	Resistance	Tolerance	Quantity
INLANX	2010	LE / SE	1.5W 1W	R002 R010 ……	1%=F 2%=G 5%=J	2010 (4)

Example: INLANX2010SE1WR010F4

Recommended solder pads (mm)



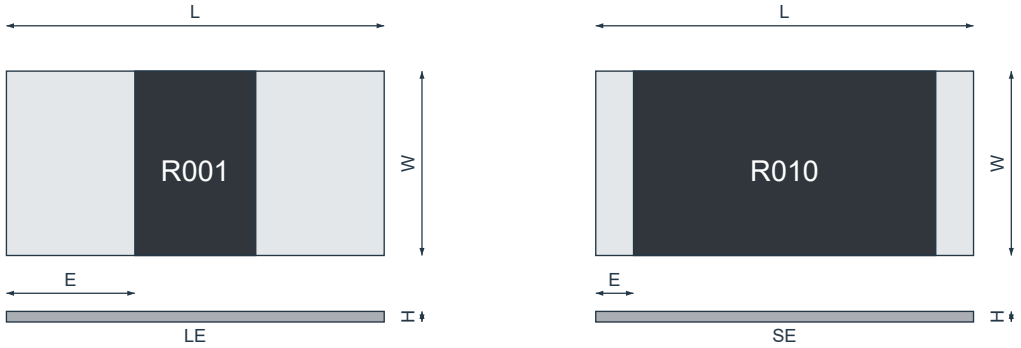
Type	A	B	L
SE	3.4	1.5	3.5
LE	3.4	3.5	2.0

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.

Construction and dimensions (mm)

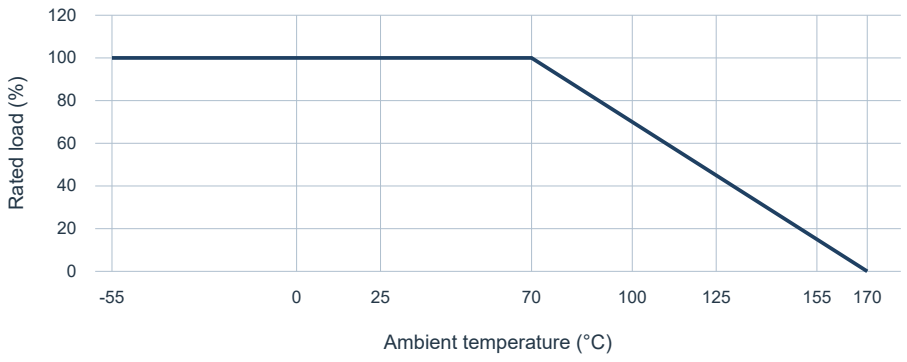


Size	Type	Symbol	Dimension (mm)	Resistance
2010	LE	L	5.0±0.2	-
2010	LE	W	2.5±0.2	-
2010	LE	E	1.5±0.2	-
2010	LE	H	0.6±0.2	-
2010	SE	L	5.0±0.2	-
2010	SE	W	2.5±0.2	-
2010	SE	E	0.6±0.2	-
2010	SE	H	0.6±0.2	-

Electrical specifications

Type	Power	Resistance	TCR ppm/°C	Operating temp.	Tolerance	Insulation	Max. voltage V
LE (2010)	1.5W	2mΩ≤R≤ 3mΩ	±50ppm/ °C	-55°C ~ +170°C	F:1% G:2% J:5%	Over 100M Ω	(P*R)½
SE (2010)	1W	3mΩ<R≤ 50mΩ	±50 ppm/ °C	-55°C ~ +170°C	F:1% G:2% J:5%	Over 100M Ω	(P*R)½

Power derating



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

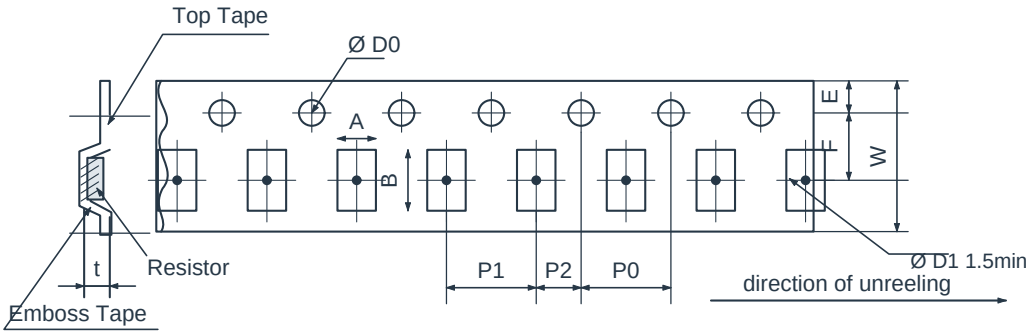
Reliability tests

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.	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

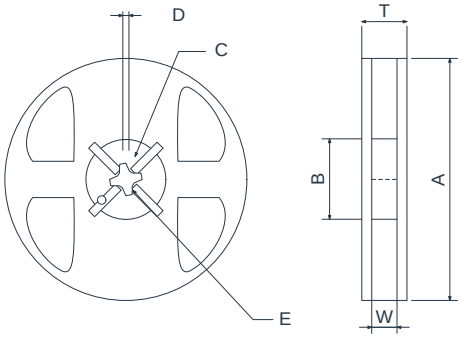
Test	Conditions / method	Requirements
Bending	Bend by 2 mm; hold for 60±5 s.	ΔR≤±(0.5%+0.05mΩ); no mechanical damage
Solvent resistance	Isopropanol (IPA), 23±5°C for 10 h.	No visible damage
High-temperature exposure	170±2°C for 1000 h; measure after resting for 1 h.	ΔR≤±(1%+0.05mΩ)
Low-temperature exposure	-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)



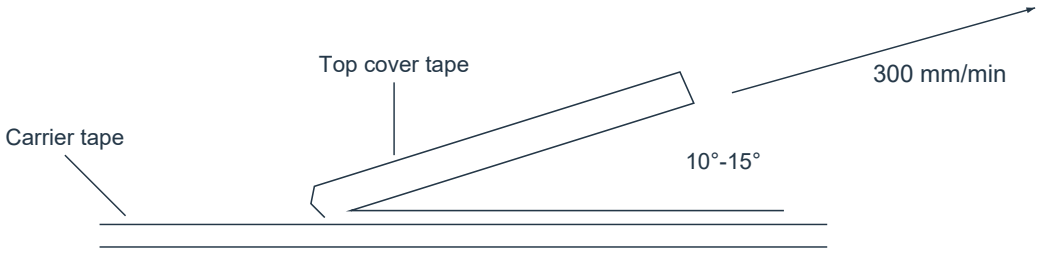
A	B	W	F	E	P1	P2	P0	D0	t
2.8±0.15	5.3±0.1	12.0±0.2	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.05	1.5~1.6	0.85±0.1

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

Cover tape peel force



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