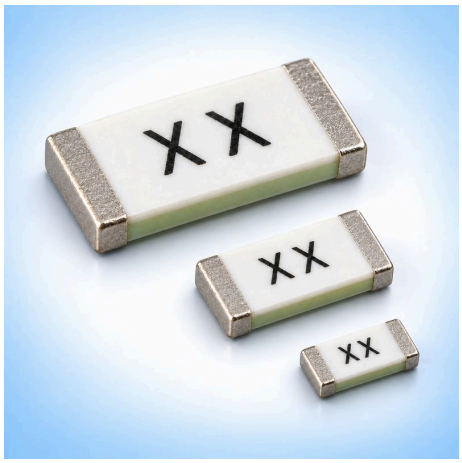
FE

Metal Foil Chip Resistors

Features

- Metal foil chip resistors in 0603, 0805, 1206, 2010 and 2512 sizes.
- Complies with RoHS requirements.
- Conforms to automotive AEC-Q200 tests.



Type designation

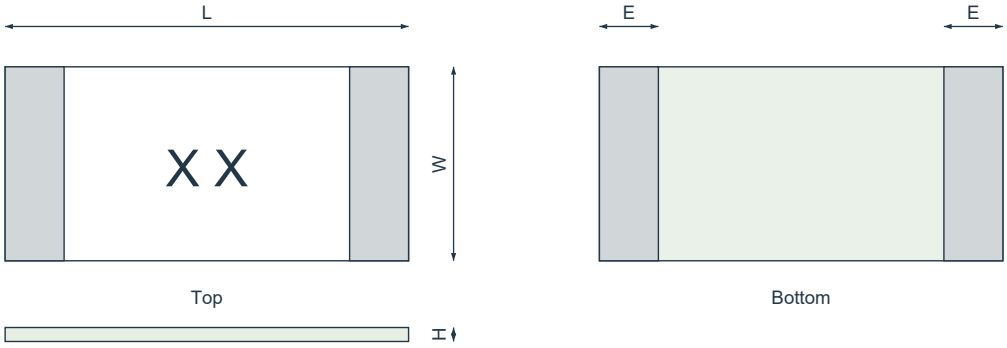
Size	Type	Rated power	Tolerance	Resistance range
0603	FE (metal foil)	0.5W	F:1% D:0.5%	R005~R009 R010~R060
0805	FE (metal foil)	0.75W	F:1% D:0.5%	R003~R009 R010~R510
1206	FE (metal foil)	1W	F:1% D:0.5%	R003~R009 R010~R910
2010	FE (metal foil)	1.5W	F:1% D:0.5%	R002~R009 R010~R400
2512	FE (metal foil)	2W	F:1% D:0.5%	R002~R009 R010~R400

Ordering code

Manufacturer	Size	Type	Power	Resistance	Tolerance
INLANX	0603	FE	W50 (0.5W)	R005 R060 ……	0.5%=D 1%=F
INLANX	0805	FE	W75 (0.75W)	R005 R200 ……	0.5%=D 1%=F
INLANX	1206	FE	1W0 (1W)	R005 R400 ……	0.5%=D 1%=F
INLANX	2010	FE	1W5 (1.5W)	R002 R100 ……	0.5%=D 1%=F
INLANX	2512	FE	2W0 (2W)	R002 R100 ……	0.5%=D 1%=F

Example: INLANX0603FE1DR005F5 / INLANX1206FE1WR005F5

Construction and dimensions (mm)



Size	Type	Resistance	L (mm)	W (mm)	H (mm)	E (mm)
0603	FE	R005	1.70±0.20	0.90±0.20	0.65±0.20	0.50±0.20
0603	FE	R006~R060	1.70±0.20	0.90±0.20	0.65±0.20	0.40±0.20
0805	FE	R003	2.10±0.20	1.35±0.20	0.65±0.20	0.65±0.20
0805	FE	R004~R510	2.10±0.20	1.35±0.20	0.65±0.20	0.50±0.20
1206	FE	R003	3.30±0.20	1.70±0.20	0.65±0.20	1.20±0.30
1206	FE	R004~R99	3.30±0.20	1.70±0.20	0.65±0.20	0.68±0.30
1206	FE	R100~R910	3.10±0.20	1.55±0.20	0.55±0.10	0.50±0.30
2010	FE	R002~R003	5.10±0.20	2.60±0.20	0.65±0.20	2.10±0.30
2010	FE	R004~R400	5.10±0.20	2.60±0.20	0.65±0.20	0.70±0.30
2512	FE	R002	6.40±0.30	3.20±0.30	0.65±0.20	2.80±0.30
2512	FE	R003	6.40±0.30	3.20±0.30	0.65±0.20	2.60±0.30
2512	FE	R004~R400	6.40±0.30	3.20±0.30	0.65±0.20	1.05±0.30

Electrical specifications

Type	Power	Resistance	TCR ppm/°C	Tolerance	Operating temp.	Max. voltage V
FE 0603	0.5W	R005~R009	±100ppm/°C	±1%(F)	-55°C~ +155°C	(P*R)½
FE 0603	0.5W	R010~R060	±50ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½
FE 0805	0.75W	R003~R009	±100ppm/°C	±1%(F)	-55°C~ +155°C	(P*R)½
FE 0805	0.75W	R010~R510	±50ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½
FE 1206	1W	R003~R009	±100ppm/°C	±1%(F)	-55°C~ +155°C	(P*R)½
FE 1206	1W	R010~R99	±50ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½
FE 1206	1W	R0100~R910	±100ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½
FE 2010	1.5W	R002~R009	±100ppm/°C	±1%(F)	-55°C~ +155°C	(P*R)½
FE 2010	1.5W	R010~R400	±50ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½
FE 2512	2W	R002~R009	±100ppm/°C	±1%(F)	-55°C~ +155°C	(P*R)½
FE 2512	2W	R010~R400	±50ppm/°C	±0.5%(D)/±1%(F)	-55°C~ +155°C	(P*R)½

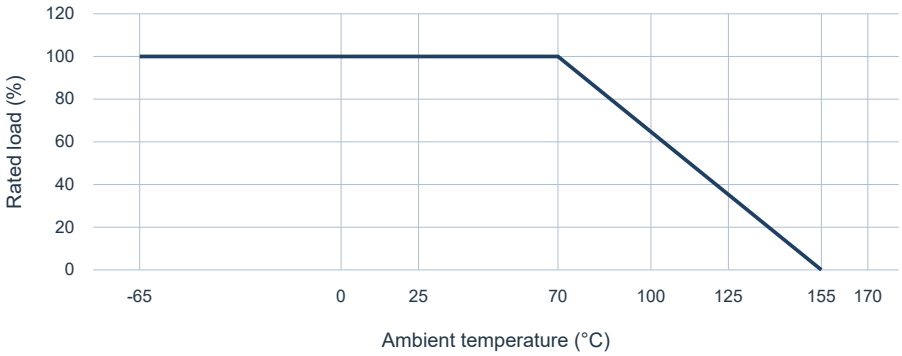
Storage and handling

Store at 5-35°C and 45-75% RH. Storage life: 2 years.

Airtight storage: 10-40°C at ≤75% RH for 2 years. At 10-60°C and 95% RH without dew, storage is limited to 30 days.

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

Power derating



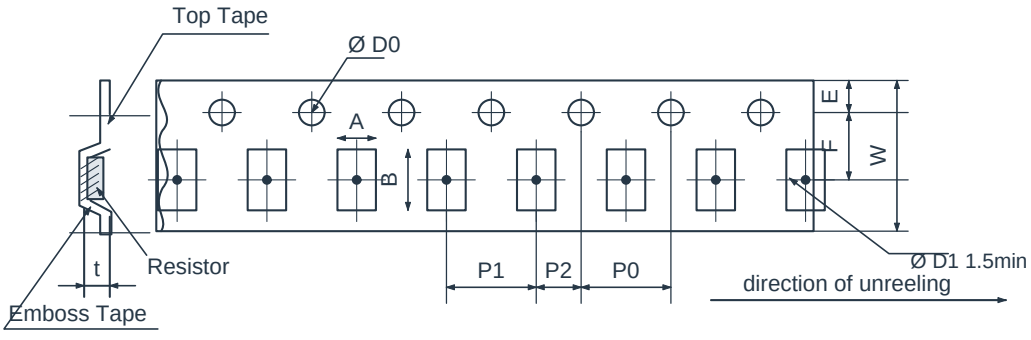
100% rated power at and below 70°C; linear derating above 70°C to zero at 155°C.

Reliability tests

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

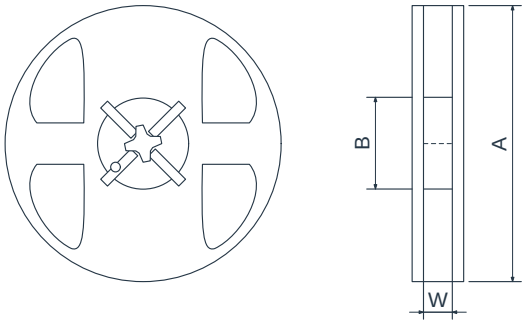
Test	Conditions / method	Resistance / requirement	IEC 60115-1
Short-time overload	P=2.5Pr; 25±2°C, 5 s.	±(1%+0.5mΩ)	4.13
High-temperature exposure	170±2°C, 1000 h.	±(1%+0.5mΩ)	4.25
Low-temperature exposure	-55±2°C, 1000 h.	±(1%+0.5mΩ)	4.25
Moisture load life	Vtest=Vmax, 60±2°C, 95% RH; 90 min ON / 30 min OFF, 1000 h.	±(2%+0.5mΩ)	4.25
Thermal shock	-55°C 30 min → room temperature 3 min → 155°C 30 min → room temperature 3 min; 100 continuous cycles.	±(1%+0.5mΩ)	4.19
Load life	Vtest=Vmax, 70±2°C; 90 min ON / 30 min OFF, 1000 h.	±(2%+0.5mΩ)	4.25
Solderability	Dip into solder at 245±5°C for 3±0.5 s.	Coverage >95%	4.17
Soldering heat	Hot-air reflow at 275±5°C for 20±1 s.	±(1%+0.5mΩ)	4.18
Mechanical shock	100 G, 11 ms, 5 shocks.	±(1%+0.5mΩ)	4.21
Substrate bending	Fulcrum span 90 mm; bend width 2 mm; glass-epoxy board thickness 1.6 mm.	±(1%+0.5mΩ)	4.33

Carrier tape dimensions (mm)



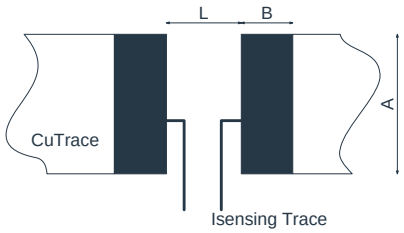
Size	A	B	W	F	E	P1	P2	P0	D0	t
0603	1.18±0.2	1.98±0.2	8.0±0.3	3.5±0.1	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	1.5±0.1	0.75±0.2
0805	1.68±0.2	2.38±0.2	8.0±0.3	3.5±0.1	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	1.5±0.1	0.87±0.2
1206	2.05±0.2	3.65±0.2	8.0±0.3	3.5±0.1	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	1.5±0.1	0.87±0.2
2010	2.85±0.2	5.45±0.2	12.0±0.3	5.5±0.1	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	1.5±0.1	0.9±0.2
2512	3.40±0.2	6.75±0.2	12.0±0.3	5.5±0.1	1.75±0.1	4.0±0.1	2.0±0.1	4.0±0.1	1.5±0.1	1.1±0.2

Reel dimensions (mm)



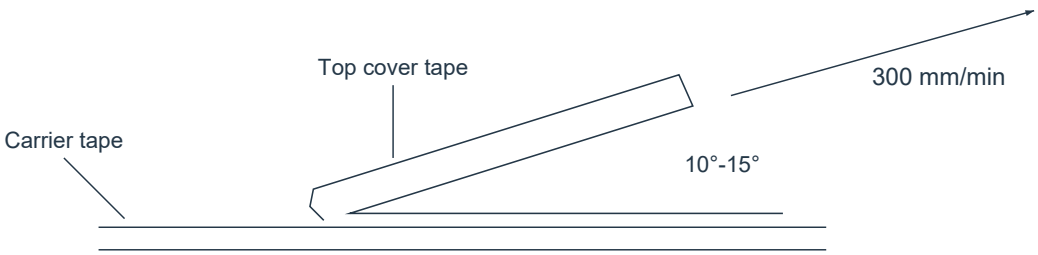
Size	A	B	W	Quantity (pcs)
0603	178	60	9.0	5000
0805	178	60	9.0	5000
1206	178	60	9.0	5000
2010	178	60	13	4000
2512	178	60	13	4000

Recommended solder pads (mm)



Type	Power	Resistance	L (mm)	A (mm)	B (mm)
FE 0603	0.5W	R005	0.50	0.92	1.35
FE 0603	0.5W	R006~R060	0.60	0.92	1.30
FE 0805	0.75W	R003	0.50	1.44	1.55
FE 0805	0.75W	R004~R510	0.80	1.44	1.40
FE 1206	1W	R003	0.60	1.84	2.10
FE 1206	1W	R004~R400	1.20	1.84	1.80
FE 2010	1.5W	R002~R003	0.70	2.88	3.65
FE 2010	1.5W	R004~R400	2.70	2.88	2.65
FE 2512	2W	R002	0.60	3.57	4.35
FE 2512	2W	R003	0.90	3.57	4.20
FE 2512	2W	R004~R400	3.10	3.57	3.10

Cover tape peel force



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