EE High-Precision Metal Film Resistors

Technical Features



• Products from a production line certified to the military standards of the People's Republic of China.
Production-line certificate No.: COC-L-204-2002

• High stability / high reliability; molded encapsulation

• High precision: nominal resistance tolerance ±0.01%～±1.0%

• Low temperature coefficient: ±2PPM/℃～±50PPM/℃ (test temperature: 25℃～85℃)

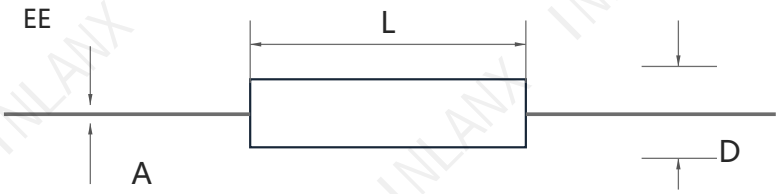
• Operating temperature range: -55℃～ +175℃

Rated voltage = $\sqrt{\text{Rated power x Nominal resistance}}$

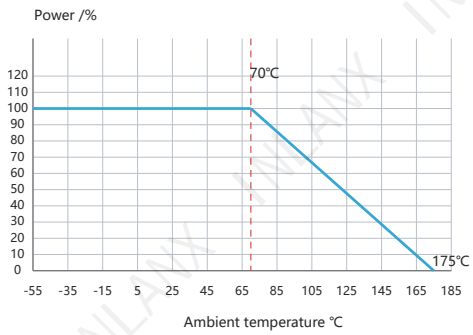
Note: resistances >10Ω belong to the EE series; resistances ≤10Ω belong to INLANX low-resistance products. See the NE series datasheet.

Dimensions (mm)

Model	EE1/20	EE1/10	EE1/8	EE1/4	EE1/2
L±0.3	4.30	6.80	10.2	15.1	18.4
D±0.3	1.90	2.50	3.80	5.20	6.50
A±0.05	0.40	0.60	0.60	0.60	0.80



Power Derating



Ordering Example

Model	Resistance	Tolerance	TCR
EE1/2	150K	A5	C7

Technical Parameters

Model	Rated power at 70℃	Max working voltage	Nominal resistance tolerance	Resistance range	Temperature coefficient
EE1/20	1/8W	200V	A5/B/C/D/F	10Ω~1MΩ	C7/C6/C5/C3/C2
	1/8W	200V	A5/B/C/D/F	1MΩ~2MΩ	C6/C5/C3/C2
	1/8W	200V	A5/B/C/D/F	2MΩ~2M5Ω	C3/C2
EE1/10	1/4W	200V	A2/A5/B/C/D/F	10Ω~100Ω	C7/C6/C5/C3/C2
	1/4W	200V	T/A2/A5/B/C/D/F	100Ω~200KΩ	C10/C9/C8/C7/ C6/C5/C3/C2
	1/4W	200V	A2/A5/B/C/D/F	200KΩ~1MΩ	C7/C6/C5/C3/C2
	1/4W	200V	A5/B/C/D/F	1MΩ~10MΩ	C6/C5/C3/C2
EE1/8	1/2W	250V	A2/A5/B/C/D/F	10Ω~100Ω	C7/C6/C5/C3/C2
	1/2W	250V	T/A2/A5/B/C/D/F	100Ω~200KΩ	C10/C9/C8/C7/ C6/C5/C3/C2
	1/2W	250V	A2/A5/B/C/D/F	200KΩ~1MΩ	C7/C6/C5/C3/C2
	1/2W	250V	A5/B/C/D/F	1MΩ~10MΩ	C6/C5/C3/C2
EE1/4	3/4W	300V	A2/A5/B/C/D/F	10Ω~100Ω	C7/C6/C5/C3/C2
	3/4W	300V	T/A2/A5/B/C/D/F	100Ω~200KΩ	C10/C9/C8/C7/ C6/C5/C3/C2
	3/4W	300V	A2/A5/B/C/D/F	200KΩ~1MΩ	C7/C6/C5/C3/C2
	3/4W	300V	A5/B/C/D/F	1MΩ~10MΩ	C6/C5/C3/C2
EE1/2	1W	350V	A2/A5/B/C/D/F	10Ω~100Ω	C7/C6/C5/C3/C2
	1W	350V	T/A2/A5/B/C/D/F	100Ω~200KΩ	C10/C9/C8/C7/ C6/C5/C3/C2
	1W	350V	A2/A5/B/C/D/F	200KΩ~1MΩ	C7/C6/C5/C3/C2
	1W	350V	A5/B/C/D/F	1MΩ~10MΩ	C6/C5/C3/C2

Notes: 1) Resistances below 10Ω are NE-type resistors; resistances above 10Ω are EE-type resistors.

2) Temperature coefficients in the table are tested over 25℃ ~ 85℃. Requirements beyond this test-temperature range are available by agreement.

3) Nominal resistance, resistance tolerance and temperature coefficient outside the above specifications are available by agreement.

Code Reference

Nominal resistance tolerance code	F	D	C	B	A5	A4	A3	A2	T
	±1%	±0.5%	±0.25%	±0.1%	±0.05%	±0.04%	±0.03%	±0.02%	±0.01%

Temperature coefficient code	C2	C3	C4	C5	C6	C7	C8	C9	C10
	±50 ppm/℃	±25 ppm/℃	±20 ppm/℃	±15 ppm/℃	±10 ppm/℃	±5 ppm/℃	±4 ppm/℃	±3 ppm/℃	±2 ppm/℃

Periodic Inspection Requirements and Methods

Inspection type	Item	Method	Requirement
Long-term	Life	GJB244A (MIL-PRF-55182) 4.8.18 Rated power, 125℃, 2000h Rated power, 125℃, 10000h	GJB244A (MIL-PRF-55182) 3.24 $\Delta R \leq \pm(0.5\%R + 0.01\Omega)$ $\Delta R \leq \pm(2\%R + 0.01\Omega)$
	Moisture resistance	GJB244A (MIL-PRF-55182) 4.8.15 -10℃ ~ +65℃, RH >90%, Rated power, 240h cycle	GJB244A (MIL-PRF-55182) 3.21 $\Delta R \leq \pm(0.40\%R + 0.01\Omega)$
	High-temperature exposure	GJB244A 4.8.19 175℃, 2000h	GJB244A (MIL-PRF-55182) 3.25 $\Delta R \leq \pm(2.0\%R + 0.01\Omega)$
Short-term	Dielectric withstand Low-temperature storage Low-temperature operation	GJB244A (MIL-PRF-55182) 4.8.12/4.8.23/4.8.10	GJB244A (MIL-PRF-55182) 3.18/3.29/3.16 $\Delta R \leq \pm(0.15\%R + 0.01\Omega)$ No mechanical damage, flashover or insulation breakdown
	Terminal strength Shock High-frequency vibration	GJB244A (MIL-PRF-55182) 4.8.11/4.8.16/4.8.17	GJB244A (MIL-PRF-55182) 3.17/3.22/3.23 $\Delta R \leq \pm(0.20\%R + 0.01\Omega)$ No mechanical damage
	Soldering heat resistance	GJB244A (MIL-PRF-55182) 4.8.14	GJB244A (MIL-PRF-55182) 3.20 $\Delta R \leq \pm(0.10\%R + 0.01\Omega)$ No mechanical damage

Applicable Standards

GB/T5729-2003 Fixed resistors for use in electronic equipment, Part 1: Generic specification

GJB244A-2001 Generic specification for film fixed resistors with quality levels

Equivalent to U.S. military standard MIL-PRF-55182

GJB360A-96 Test methods for electronic and electrical components

AEC-Q200 Automotive industry test standard