

Metal Film Precision Resistors

Metal Film Resistors Offer More Precision Design Options

► Preview

Known for providing design engineers with a comprehensive range of military-qualified resistive precision devices, Token Electronics Advanced Metal Film has further expanded its military product capabilities.

These cost-effective high precision moulding resistors meets ROHS requirements, MIL-PRF-55182, and GJB244A-2001 quality standards.

EE Series manufactured by depositing a homogeneous film of metal alloy onto a high-grade ceramic body, the metal film resistors are moulded into cylinder shape to provide mechanical, electrical and climatic protection.

EE Series equate Vishay, IRC, EBG, Panasonic Precision Devices with more competitive price and fast delivery. Contact us with your specific needs.

Production Standard :

Which is made referencing to Chinese National Quality Standard GJB244A-2001 standards, and USA Military/Established Reliability MIL-PRF-55182 in environmental and dimensional requirements.

Applications :

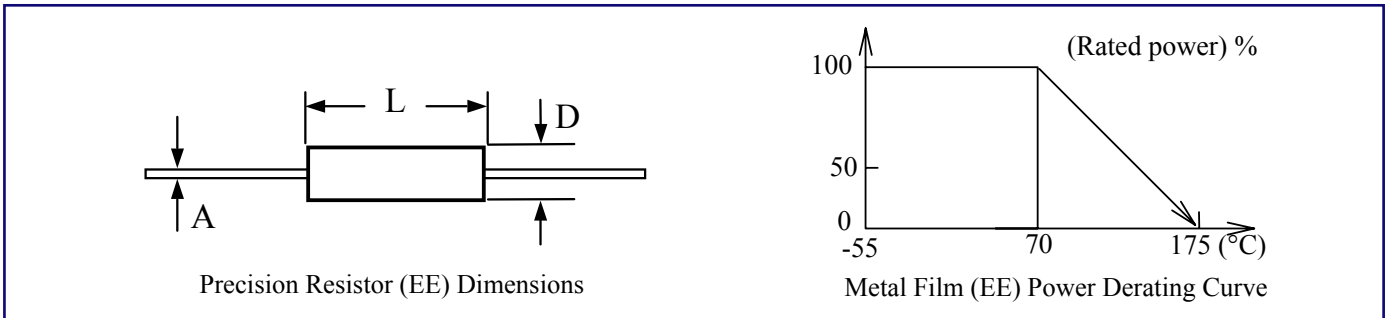
- Telecom.
- Medical electronics.
- Precision Instruments, Avionics.
- High gain feedback applications.
- Measuring and calibration equipment.

Features :

- Power Rating :0.125W ~ 1W.
- Precision tolerance tight to B(± 0.10).
- Precision metal film, excellent stability and reliability.
- Lead (Pb)-free and RoHS compliant, Covers all general type resistors.
- Superior electrical TCR performances narrowed to C6 (± 10 ppm/ $^{\circ}$ C).



► Dimensions & Technical Characteristics



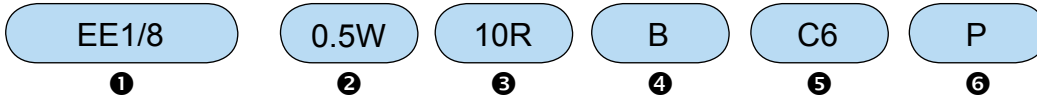
Type		EE1/20	EE1/10	EE1/8	EE1/4	EE1/2
Rated Wattage (W)	70 °C	0.125	0.25	0.5	0.75	1.0
	125 °C	0.05	0.10	0.125	0.25	0.5
Max. Working Voltage (V)		200	200	250	300	350
Dimensions (mm)	L ± 0.3	4.30	6.80	10.2	14.5	18.4
	D ± 0.4	1.90	2.50	3.80	4.50	6.50
	A ± 0.05	0.40	0.60	0.60	0.60	0.80
Resistance Range (Ω)		20 ~ 200K	10 ~ 3M	10 ~ 5M	10 ~ 10M	10 ~ 15M
Working Temperature Range		-55°C ~ +175°C				
Nominal Resistance Tolerance		B(±0.10%), C(±0.25%), D(±0.50%), F(±1.00%) between 5Ω to 3MΩ can be reached to A5(±0.05%) and A2(±0.02%)				
Temperature Coefficient PPM Normal test range(+25°C ~ +85°C) Special require range(-10°C ~ +50°C)		C6(±10PPM/°C), C5(±15PPM/°C), C3(±25PPM/°C), C2(±50PPM/°C) between 5Ω to 3MΩ can be reached to C7(±5PPM/°C)				

Remark: Please contact Token's Representatives if your requirement is not in above range.

► Periodical Inspection Items and Methods

Type	Item	Method	Requirement
Long Period	Life time	GJB244A (MIL-PRF-55182) 4.8.18 Rated Wattage, 125°C, 2000h 10000h	GJB244A (MIL-PRF-55182) 3.24 $\Delta R \leq \pm(0.5\%R + 0.01\Omega)$ $\Delta R \leq \pm(2\%R + 0.01\Omega)$
	Humidity	GJB244A (MIL-PRF-55182) 4.8.18 -10°C ~ +65°C, RH<90% Rated Wattage, Cycle 240h.	GJB244A (MIL-PRF-55182) 3.21 $\Delta R \leq \pm(0.4\%R + 0.01\Omega)$
	High temp exposed	GJB244A 4.8.19 175°C 2000h	GJB244A (MIL-PRF-55182) 3.25 $\Delta R \leq \pm(2.0\%R + 0.01\Omega)$
Short Period	Dielectric voltage	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 physical damage, arc, isolation break through
	Lead strength Impact 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 physical damage
	Solderability	GJB244A (MIL-PRF-55182) 4.8.14	GJB244A (MIL-PRF-55182) 3.20; $\Delta R \leq \pm(0.10\%R + 0.01\Omega)$ no physical damage

How to Order



① Part Number: EE1/20, EE1/10,
EE1/8, EE1/4,
EE1/2.

② Rated Power (W)

Code	Temperature	Rated Power (W)
EE1/20	70 °C	0.125W
EE1/10		0.250W
EE1/8		0.500W
EE1/4		0.750W
EE1/2		1.000W
RN50	125 °C	0.050W
RN55		0.100W
RN60		0.125W
RN65		0.250W
RN70		0.500W

③ Resistance Value (Ω):

Code	Resistance Value (Ω)
10R	10Ω
100R	100Ω
1K1	1.1KΩ
110K	110KΩ
1M1	1.1MΩ
10M	10MΩ

④ Resistance Tolerance (%)

Code	Resistance Tolerance (%)
B	±0.10
C	±0.25
D	±0.50
F	±1.00

⑤ Temperature Coefficient (ppm/°C)

Code	Temperature Coefficient (ppm/°C)
C2	±50ppm/°C
C3	±25ppm/°C
C5	±15ppm/°C
C6	±10ppm/°C

⑥ Packaging: P (Bulk)

Back to 1st Page - Precision Resistors (EE)