

Metal Film Extra Low Ohmic Precision Resistors

Token Advanced Film NE Spell High Precision

► Preview

A homogenous film of metal alloy is deposited on a high grade ceramic body. After a helical groove has been cut in the resistive layer, tinned connecting wires of electrolytic copper are welded to the end-caps.

The resistors are moulding which provides electrical, mechanical, and climatic protection.

Token has complete capability to develop specific reliability programs designed to customer requirements. Products equate Vishay, Ohmite, Caddock, IRC, EBG, Panasonic Precision Devices with more competitive price and fast delivery.

Full line products meet RoHS compliant. Detailed specifications, both mechanical and electrical, please contact our sales representative for more information.

MIL-PRF-55182 :

The NE series meets the electrical, environmental and dimensional requirements of MIL-PRF-55182. Referencing to Chinese National Quality Standard GJB244A-2001.

POWER RATING

Power ratings are based on the following two conditions,

- $\pm 2.0\%$ maximum ΔR in 10 000 h load life.
- $+ 175\text{ }^{\circ}\text{C}$ maximum operating temperature.

Applications

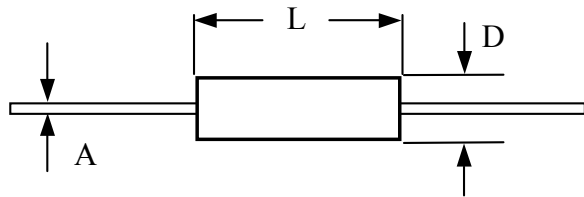
- Telecom
- Test and measurement
- Space and aircraft electronics
- Industrial process control systems
- Measuring and calibration equipment

Features

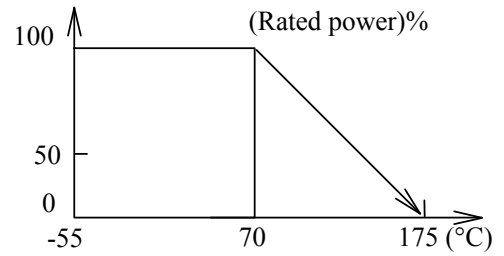
- Metal film moulding type
- Industrial grades, RoHS Compliant.
- Excellent stability and High reliability.
- Caps range of ultra low resistance $0.05\Omega \sim 10\Omega$.
- Extreme precision tolerance tight to A5($\pm 0.05\%$).
- Extensive stocking program at distributors and factory.
- Controlled temperature coefficient and narrowed to C7 ($\pm 5\text{PPM}/^{\circ}\text{C}$).
- Token NE Series meets MIL-PRF-55182 and GJB244A-2001 quality standards.



► Dimensions & Technical Characteristics



Metal Film (NE) Dimensions



Precision Resistor (NE) Power Derating Curve

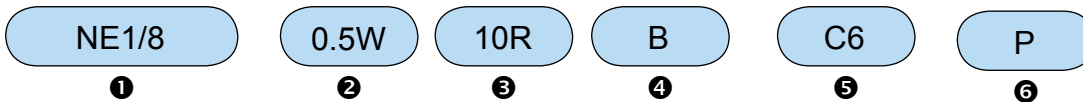
Type		NE1/10	NE1/8	NE1/4	NE1/2
Rated Wattage (W)	70 °C	0.25	0.5	0.75	1.0
	125 °C	0.10	0.125	0.25	0.5
Resistance Range (Ω)		0.05 ~ 10	0.05 ~ 10	0.025 ~ 10	0.025 ~ 10
Dimensions (mm)	$L \pm 0.3$	6.80	10.2	14.5	18.4
	$D \pm 0.4$	2.50	3.80	4.50	6.50
	$A \pm 0.05$	0.60	0.60	0.60	0.80
Working Temperature Range		-55°C ~ +175°C			
Nominal Resistance Tolerance J($\pm 5.0\%$) F($\pm 1.0\%$) D($\pm 0.5\%$) C($\pm 0.25\%$) B($\pm 0.10\%$) A5($\pm 0.05\%$)		all resistance: J 0.1 Ω \leq R \leq 0.2 Ω : J / F 0.2 Ω $<$ R \leq 0.4 Ω : J / F / D 0.4 Ω $<$ R \leq 1.0 Ω : J / F / D / C 1 Ω $<$ R \leq 5 Ω : J / F / D / C / B 5 Ω $<$ R : J / F / D / C / B / A5			
Temperature Coefficient PPM Normal test range (+25°C ~ +85°C)		1 Ω \leq R \leq 3 Ω : C2(± 50 PPM/ $^{\circ}$ C), C3(± 25 PPM/ $^{\circ}$ C) R $>$ 3 Ω : C2(± 50 PPM/ $^{\circ}$ C), C3(± 25 PPM/ $^{\circ}$ C), C5(± 15 PPM/ $^{\circ}$ C), C6(± 10 PPM/ $^{\circ}$ C), C7(± 5 PPM/ $^{\circ}$ C) R $<$ 1 Ω : No Temperature Coefficient reference			

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: NE1/10, NE1/8, NE1/4, NE1/2

② Rated Power (W)

Code	Temperature	Rated Power (W)
NE1/10	70 °C	0.25
NE1/8		0.50
NE1/4		0.75
NE1/2		1.00
NE1/10	125°C	0.10
EE1/8		0.125
EE1/4		0.25
EE1/2		0.50

③ Resistance Value

Code	Resistance Value
R01	0.01Ω
R1	0.1Ω
1R	1Ω

④ Resistance Tolerance

Code	Resistance Tolerance
A5	±0.05%
B	±0.10%
C	±0.25%
D	±0.50%
F	±1.00%
J	±5.00%

④ Temperature coefficient (PPM/°C)

Code	Temperature coefficient
C2	±50ppm/°C
C3	±25ppm/°C
C5	±15ppm/°C
C6	±10ppm/°C
C7	±5ppm/°C

⑥ Packaging: P (Bulk)

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