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DIRECT

Electronics Tech.

(NE) Low Ohmic Value Ultra Precision Resistors

Web: www.direct-token.com

Email: rfq@direct-token.com

Direct Electronics Industry Co., Ltd.

China: 12F, Zhong Xing Industry Bld., Chuang Ye Road,
Nan Shan District, Shen Zhen City,
Guang Dong, China 518054
Tel: +86 755 26055363; Fax: +86 755 26055365

Taiwan: No.137, Sec. 1, Zhongxing Rd., Wugu District,
New Taipei City, Taiwan, R.O.C. 24872
Tel: +886 2981 0109 Fax: +886 2988 7487

Product Introduction

Direct advanced film (NE) low resistance ultra-precision resistors spell high precision.

Features :

- Direct NE Series meets MIL-PRF-55182 and GJB244A-2001 quality standards.
- Controlled temperature coefficient and narrowed to C7 (±5PPM/℃).
- Extensive stocking program at distributors and factory.
- Extreme precision tolerance tight to A5(±0.05%).
- Caps range of ultra low resistance 0.05Ω ~ 10Ω.
- Excellent stability and High reliability.
- Industrial grades, RoHS Compliant.
- Metal film moulding type.

Applications :

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

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.

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

Full line products meet RoHS compliant. Detailed specifications, both mechanical and electrical, contact our sales representative or link to Direct official website "Precision Resistors"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.

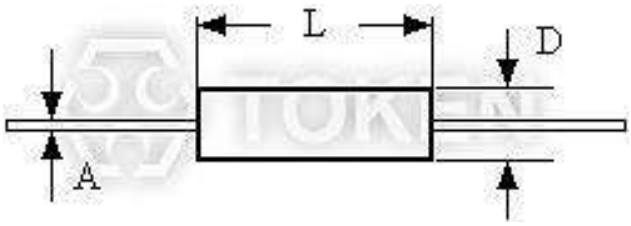
POWER RATING:
Power ratings are based on the following two conditions,

- ± 2.0 % maximum ΔR in 10 000 h load life.
- + 175℃ maximum operating temperature.

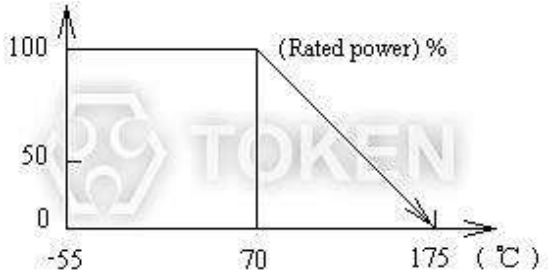
Dimensions & Technical Characteristics

Dimensions & Technical Characteristics (NE)

Type		NE1/20	NE1/10	NE1/8	NE1/4	NE1/2
Rated Wattage (W)	70 ℃	0.125 (1/8W)	0.25 (1/4W)	0.5 (1/2W)	0.75 W	1 W
Max. Working Voltage (V)		200V	200V	250V	300V	350V
Resistance Range (Ω)		0.05 ~ 10	0.05 ~ 10	0.05 ~ 10	0.05 ~ 10	0.05 ~ 10
Dimensions (Unit: mm)	L ± 0.3	4.3	6.8	10.2	15.1	18.4
	D ± 0.4	1.9	2.5	3.8	5.2	6.5
	A ± 0.05	0.40	0.60	0.60	0.60	0.80
Working Temperature Range		-55℃ ~ +175℃				
Nominal Resistance Tolerance **J(±5.0%) F(±1.0%)** **D(±0.5%) C(±0.25%)** **B(±0.10%)** **A5(±0.05%)**		all resistance: J 0.05Ω≤R<1Ω: J / F 1Ω≤R<5Ω: B / C / D / F 5Ω≤R≤10Ω: A5 / B / C / D / F				
Temperature Coefficient PPM **Normal test range(+25℃ ~ +85℃)**		0.05Ω≤R<1Ω: >±100PPM/℃ 1Ω≤R<5Ω: C2(±50PPM/℃), C3(±25PPM/℃), C5(±15PPM/℃), C6(±10PPM/℃) 5Ω≤R≤10Ω: C2(±50PPM/℃), C3(±25PPM/℃), C5(±15PPM/℃), C6(±10PPM/℃), C7(±5PPM/℃)				



Mold Type (NE) Dimensions



(NE) Power Derating Curve

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

Mechanical and Electrical Test Conditions

Mechanical and Electrical Test Conditions (NE)

Type	Item	Method	Requirement
Long Period	Life time	GJB244A (MIL-PRF-55182) 4.8.18 Rated Wattage,125 ℃,2000h,10000h	GJB244A (MIL-PRF-55182) 3.24 ΔR≤±(0.5%R+0.01Ω) ΔR≤±(2%R+0.01Ω)
	Humidity	GJB244A (MIL-PRF-55182) 4.8.18 -10℃ ~ +65℃, RH<90% Rated Wattage, Cycle 240h.	GJB244A (MIL-PRF-55182) 3.21 ΔR≤±(0.4%R+0.01Ω)
	High temp exposed	GJB244A 4.8.19 175℃ 2000h	GJB244A (MIL-PRF-55182) 3.25 ΔR≤±(2.0%R+0.01Ω)
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 ΔR≤±(0.15%R+0.01Ω) 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 ΔR≤±(0.20%R+0.01Ω) no physical damage
	Solderability	GJB244A (MIL-PRF-55182) 4.8.14	GJB244A (MIL-PRF-55182) 3.20 ΔR≤±(0.10%R+0.01Ω) no physical damage

Order Codes

Order Codes (NE)

NE1/8	0.5W	10R	B	C6	P

Part Number
NE1/20
NE1/10
NE1/8
NE1/4
NE1/2

Rated Power (W)		
NE1/20	70℃	0.125
NE1/10		0.25
NE1/8		0.5
NE1/4		0.75
NE1/2		1.0

Resistance Value (Ω)	
0R1	0.1Ω
1R	1Ω
10R	10Ω

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

Temperature coefficient (PPM/℃)	
C2	±50
C3	±25
C5	±15
C6	±10
C7	±5

Package	
P	Bulk

General Information

High Precision Devices Made in Direct

Direct is equipped to design and produce custom components to meet many design and reliability demands.

Direct's line of high-reliability and precision products reflects a long-term commitment to our industrial and military customers. In addition to standard industry-grade resistor products, we also have many resistive products designed to meet various military source-controlled drawings.

We continually strive to meet the changing application requirements of the markets by developing new products and manufacturing technologies on an on-going basis.

Enhanced Precision and Stability for Low-Cost Uses

Every component Direct provides to the commercial, industrial, and military markets for cost-efficiency uses is backed by the comprehensive testing and failure analysis capabilities of our own technical staff, whom are industrial experts in understanding and meeting the requirements of the environment.

Low TCR - Fast Approach to a Steady State

Direct Electronics provides a precision Temperature Coefficient of Resistance TCR as low as 2 ppm/℃, If you must guarantee a smaller resistance change in your application. TCR is the best known parameter used to specify a resistor’s stability, and is used to depict the resistive element’s sensitivity to temperature change due to ambient temperature variations.

A resistor's TCR tells how much its value changes as its temperature changes. It is usually expressed in ppm/℃ (parts per million per degree Centigrade) units.

Long-Term Proven Service

Our technical expertise, our knowledge of the industry, our broad product offering, and our ability to work long-term are all part of Direct’s ongoing commitment to meeting the changing requirements of our most reliability-conscious customer, today and in the future.