AXIAL LEADED PRECISION RESISTORS

TYPE HOLCO SERIES

INTRODUCTION

The HOLCO Series Axial Leaded Precision Resistors are designed for applications that demand exceptional accuracy, long-term stability, and reliable performance under challenging operating conditions. Manufactured using advanced sputtered metal alloy film technology and precision laser trimming, the HOLCO Series delivers outstanding resistance control, ultra-low temperature drift, and proven reliability across industrial, instrumentation, aerospace, defense, and medical applications.



The latest HOLCO Series offering builds upon a proven precision resistor platform by combining tight tolerances down to ±0.05%, low TCR performance down to ±5 ppm/°C, power ratings up to 1W, and comprehensive environmental qualification data. Designed to maintain circuit accuracy throughout the product lifecycle, HOLCO resistors help engineers reduce system drift, improve measurement precision, and enhance overall product reliability.

FEATURES

- RoHS, PFOS, PAHs, and Halogen-Free compliant
- Long-term stability of <0.05% per annum
- Operating temperature range: -55°C to +155°C
- High insulation resistance $>10^{12}$ Ω
- Robust epoxy-coated construction

APPLICATIONS

- Test & Measurement Equipment
- Industrial Automation & Control Systems
- Precision Power Supplies
- Medical Electronics
- High-Performance Analog Circuits

ELECTRICAL CHARACTERISTICS

Type	H4P	H4	H8
Power rating @70°C	1W	0.5W	0.25W
Temperature Rise	70°C	55°C	40°C
Limiting Element Voltage	500V	350V	350V

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CATEGORY INDEX

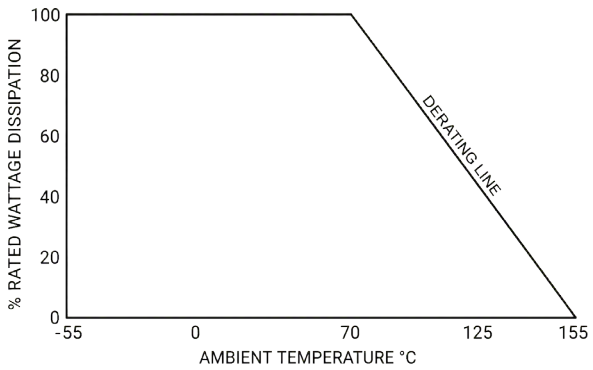
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ENVIRONMENTAL CHARACTERISTICS

Characteristics	Typical Data	Reference
Voltage Coefficient of Resistance (Between 10% and Full Rated Voltage)	Less Than 5ppm/Volt Applied	N/A
Insulation Resistance at 500 Volts	Greater Than 10^{12} Ohms	N/A
Resistance to Soldering Heat (260°C for 10 Secs.)	Less Than 0.05%	BS CECC 40101 004 Para 4.15.2
Ambient Temperature Range	-55°C to +155°C	BS CECC 40101 004
Rapid Change of Temperature (-55°C to +155°C, 5 cycles)	Less Than 0.04%	BS CECC 40101 004 Para 4.16
Shelf Life (at Normal Room Temp.)	Less Than 0.05% Per Annum	N/A
Vibration (10-500 Hz Amplitude 0.75mm, or Acceleration 98m/s2 whichever is less severe, sweep duration 6 hours)	Less Than 0.04%	BS CECC 40101 004 Para 4.19
Vibration (55-2000 Hz Simple Harmonic Motion, Max. Acceleration 98m/s2, Duration 35±5 Minutes	Less Than 0.04%	**(MIL STD 202) (METHOD 204-C)**
Bump (390m/s2, 4000 Bumps)	Less Than 0.03%	BS 2011 Part 2.1 Eb 1977 (1984)
Load Stability	See graph	N/A
Damp Heat Steady State	See graph	BS CECC 40101 004 Para 4.21

DERATING CURVE



VOLTAGE RATING

Resistors shall have a rated direct-current (DC) continuous working voltage or an approximate sine-wave root-mean-square (RMS) alternating-current (AC) continuous working voltage at commercial- line frequency and waveform corresponding to the power rating, as determined from the following formula

$$RCWV = \sqrt{P} \times R$$

Note:

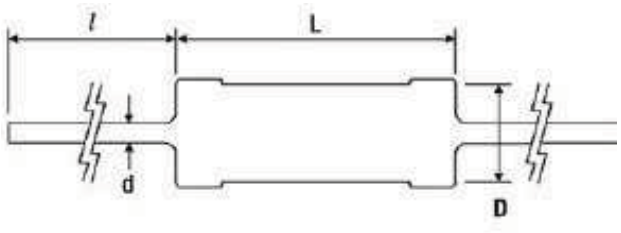
1. Max. working voltage or $\sqrt{P} \times R$ whichever is lesser
2. Max. overload voltage or $2.5\sqrt{P} \times R$

Where : RCWV = Rated DC or RMS AC continuous working voltage at commercial-line frequency and waveform (volt)
P = Power Rating (watt)
R = Nominal Resistance (ohm)

In no case shall the rated DC or RMS AC continuous working voltage be greater than the applicable maximum value. The overload voltage is 2.5 times RCWV or Max. Overload voltage whichever is lower.

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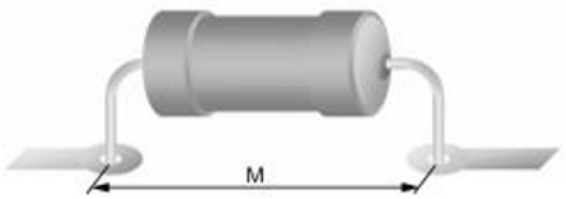
CONSTRUCTION AND DIMENSIONS (Unit:mm)



Parameter	H4P (mm)	H4 (mm)	H8 (mm)
Body Length (L) maximum	10.50	10.50	7.20
Body Diameter (D) maximum	3.70	3.70	2.70
Lead Diameter (Ød) maximum	0.60	0.60	0.60
Lead Length (l) nominal	30.0	30.0	30.0
Recommended Mounting Pitch	12.0	12.70	10.2
Weight (g/100 resistors)	40	40	24

N.B. To prevent damage to the components conformal coating, the leads should be adequately supported during the forming process

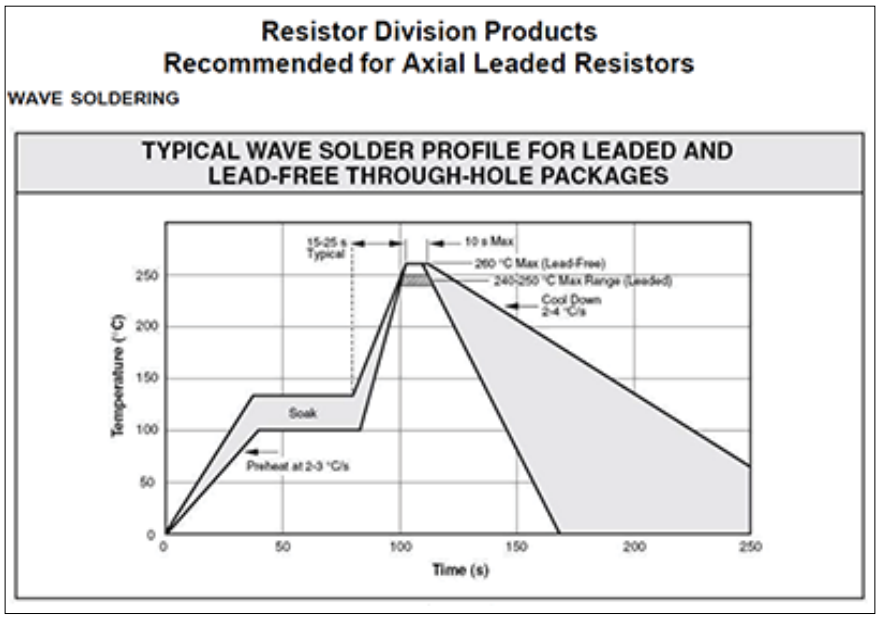
RECOMMENDED PCB LAYOUT PLAN (Unit:mm)



Type	M_{min}
H8	10 mm
H4 & H4P	14 mm

SOLDERING PROFILE

- Mainly applicable to surface mount devices



Note : All temperatures refer to the lead temperature of the resistor

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MARKING

Type	Alpha Numeric
Example	H4P/H4/H8
Resistance Value	2K21
Tolerance	0.1%
TCR Code	Y

TCR CODES ARE AS BELOW

A	±5 ppm
B	±10 ppm
Y	±15 ppm
D	±25 ppm
C	±50 ppm
Z	±100 ppm

LABELS

Label shall be marked with the following items:

1. Resistance value and tolerance
2. Power rating and size
3. Quantity and description
4. Part number
5. Lot No. and PO number



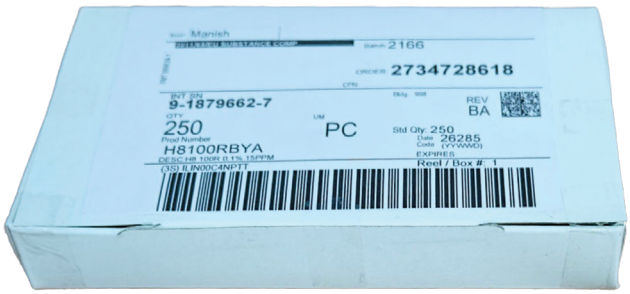
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PACKAGING SPECIFICATION (Unit:mm)

White Corrugated Box of 250 pieces as (SPQ) standard pack quantity. 10 flaps of 25 no's each layer are separated by white sulphur free paper.

Type	H4P (mm)	H4 (mm)	H8 (mm)
Length	130	75	20
Width	130	75	30
Height	130	75	30





ENVIRONMENT RELATED SUBSTANCE

This product complies with the applicable requirements of the EU RoHS Directive, EU PAHs requirements, EU PFOS requirements, and halogen-free material expectations. Ozone-depleting substances are not used in the manufacturing process for this product. This product is not manufactured using chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrobromofluorocarbons (HBFCs), or other ozone-depleting substances at any stage of manufacture.

STORAGE CONDITION (MSL1)

The performance of these products, including solderability, is guaranteed for one year from the date of arrival at the customer location, provided the products remain in the original delivered packaging and are stored at 25°C ± 5°C and 60%RH ± 10%RH. Even within this period, the products should not be stored under conditions that may adversely affect electrical performance, solderability, or packaging integrity.

1. In salty air or in atmospheres containing corrosive gases such as Cl2, H2S, NH3, SO2, or NO2.
2. In direct sunlight

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ORDERING INFORMATION

Typical product code
H8 10R B Y A

Product Type

H8	Axial Leaded Precision Resistors

Resistance

1R0	1.0Ω
10R	10Ω
1KO	1KΩ (1000 Ohms)
10K	10KΩ (10,000 Ohms)

Tolerance

A	0.05%
B	0.1%
C	0.25%
D	0.5%
F	1.0%

Release

A	Part can only be sold with commercial or C of C release

TCR Code

A	±5 ppm
B	±10 ppm
Y	±15 ppm
D	±25 ppm
C	±50 ppm
Z	±100 ppm

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