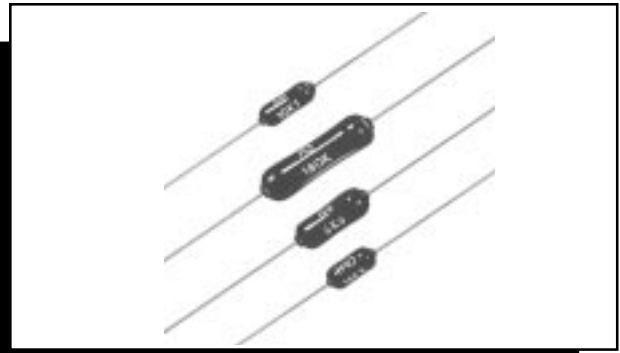

Axial Leaded Precision Resistors

TYPE HOLCO SERIES



The Holco range of Precision Metal Film Resistors meets the requirement for economically priced components for industrial and military applications. The manufacturing facility utilises closely controlled production processes including the sputter coating of metal alloy films to ceramic substrates, and laser spiralling to achieve close tolerance and high stability resistors. An epoxy coating is applied for environmental and mechanical protection. Commercially the Series is available in three case sizes, from 1 ohm to 10M ohms, tolerances from 0.05% to 1% and TCR's from 5ppm/°C to 100ppm/°C. Offered with release to BS CECC 40101 004, 030 and 804 the H8 is available via distribution.

MEGGITT HOLSWORTHY KEY FEATURES

- **ULTRA PRECISION - DOWN TO 0.05%**
- **MATCHED SETS AVAILABLE TO 2ppm°/C**
- **HIGH PULSE WITHSTAND**
- **LOW REACTANCE**
- **LOW TCR - DOWN TO 5ppm°/C**
- **LONG TERM STABILITY**
- **UP TO 1 WATT AT 70°C**
- **RELEASED TO CECC 40101 004, 030 AND 804**

ELECTRICAL

**Holco Type
Approved Ratings**

H2

H4

H8

BS CECC 40101 004

Style:	L	K	H	J
Power Rating at 70°C:	0.5W	0.25W	0.063W	0.125W
Temperature Rise (maximum):	43°C	32°C	14°C	28°C
Limiting Element Voltage:	350V	250V	150V	200V

BS CECC 40101 030

Style:	K	J	H
Power Rating at 125°C:	0.25W	0.125W	0.1W
Temperature Rise (maximum):	30°C	30°C	30°C
Limiting Element Voltage:	350V	250V	200V

BS CECC 40101 804

Style:	C	B	A
Power Rating at 125°C:	0.5W	0.25W	0.125W
Limiting Element Voltage:	350V	350V	350V

Commercial Ratings

Power Rating at 70°C:	1.0W	0.5W	0.25W
Temperature Rise:	65°C	55°C	40°C
Limiting Element Voltage:	350V	300V	250V

VALUE RANGE

TCR(ppm/°C)

CODE

5	A	50R~600K	50R~330K	50R~200K
10	B	50R~1M0	50R~680K	50R~250K
15	Y	10R~2M0	10R~1M5	10R~1M0
25	D	10R~4M0	10R~2M0	10R~1M5
50	C	1R0~6M0	1R0~4M0	1R0~4M0
100	Z	1R0~10M	1R0~4M0	1R0~4M0

STANDARD TOLERANCES (%):

1.0, 0.5,	1.0, 0.5,	1.0, 0.5,
0.25, 0.1	0.25, 0.1	0.25, 0.1
0.05	0.05	0.05

The value ranges above may be restricted by tolerance

GENERAL DATA

LEAD MATERIAL - Solder coated copper. Solderability to BS CECC 40101 004 Para 4.15.1

ENCAPSULATION - Conformal Epoxy Coating

RESISTOR MARKING - Legend printed in accordance with CECC 40000 Para 2.4

SOLVENT RESISTANCE - The epoxy coating and print will withstand the action of all commonly used industrial cleansing solvents.

APPROVED VALUE RANGES

40101-004, 40101-030

40101-804

	Style		Z	C	D	Y	Style	C	D	T
	004	030	100ppm	50ppm	25ppm	15ppm		50ppm	25ppm	15ppm
H2	L	K	10R~10M	49R9~1M0	49R9~1M0	49R9~1M0	C	49R9~1M0	49R9~1M0	49R9~1M0
H4	K	J	10R~1M0	49R9~1M0	49R9~1M0	49R9~1M0	B	49R9~1M0	49R9~1M0	49R9~1M0
H8	H,J	H	10R~1M0	10R~1M0	49R9~1M0	49R9~1M0	A	49R9~1M0	49R9~1M0	49R9~1M0

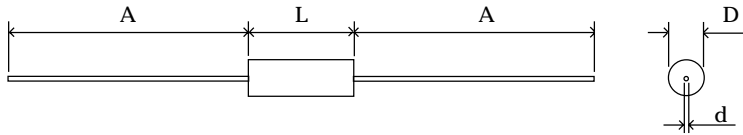
ELECTRICAL

	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 SECONDS)	LESS THAN 0.05%	BS CECC 40101 004 PARA 4.15.2
SHORT TERM OVERLOAD (6.25 TIMES RATED BS CECC WATTAGE FOR 5 SECONDS)	LESS THAN 0.06%	BS CECC 40101 004 PARA 4.11
AMBIENT TEMPERATURE RANGE	-55°C TO +155°C	BS CECC 40101 004 BS CECC 40101 030 & COMMERCIAL
RAPID CHANGE OF TEMPERATURE (-55°C TO +155°C, FIVE CYCLES)	LESS THAN 0.04%	BS CECC 40101 004 PARA 4.16
SHELF LIFE (AT NORMAL ROOM TEMPERATURE)	LESS THAN 0.05% PER ANNUM	n/a
VIBRATION (10-500 HZ, AMPLITUDE 0.75mm, OR ACCELERATION 98m/s^2 WHICH 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, MAXIMUM ACCELERATION 98m/s^2 , DURATION 35 ± 5 MINUTES)	LESS THAN 0.04%	MIL STD 202 METHOD 204-C
BUMP (390m/s^2 , 4000 BUMPS)	LESS THAN 0.03%	BS 2011 PART 2.1 Eb 1977 (1984)
LOAD STABILITY	SEE GRAPHS	n/a
DAMP HEAT STEADY STATE	SEE GRAPH	BS CECC 40101 004 PARA 4.21
NOISE PERFORMANCE	BETTER THAN	QUANTECH NOISE TEST
H2	LESS THAN 1M0	-15dB
	1M0 - 3M0	-13dB
	3M0 - 6M0	-9dB
	GREATER THAN 6M0	-5dB
H4	LESS THAN 300K	-15dB
	300K - 500K	-13dB
	GREATER THAN 500K	-9dB
H8	LESS THAN 100K	-15dB
	100K - 400K	-10dB
	GREATER THAN 400K	-5dB

(0dB IS $1\mu\text{V/V}$ OF APPLIED DC IN A DECADE OF FREQUENCY)

DIMENSIONS

	H2	H4	H8
Body Length (L) maximum:	15.5 mm	10.0 mm	7.20 mm
Body Diameter (D) maximum:	5.50 mm	3.70 mm	2.50 mm
Lead Diameter (d) maximum:	0.80 mm	0.60 mm	0.60 mm
Lead Length (A) nominal:	30.0 mm	30.0 mm	30.0 mm
Recommended Mounting Pitch:	18.4 mm	12.7 mm	10.2 mm
Weight (g/100 resistors)	115	40	24

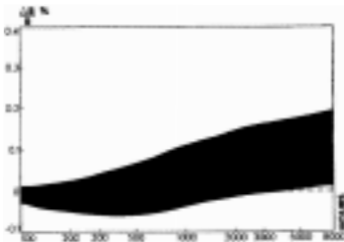


All Dimensions are Nominal and in mm. Do Not Scale.

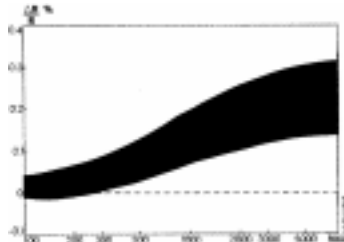
N.B. To prevent damage to the components conformal coating, the leads should be adequately supported during the forming operation.

CHARACTERISTICS

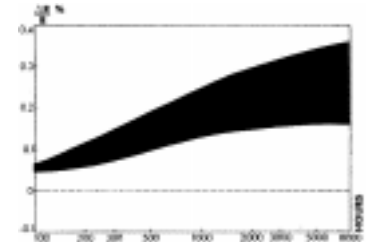
LONG TERM STABILITY
BS CECC 40101 004
RATINGS AT 70°C
H2 - 0.5 W
H4 - 0.25 W
H8 - 0.125 W
TYPICAL DATA



LONG TERM STABILITY
BS CECC 40101 030
RATINGS AT 125°C
H2 - 0.25 W
H4 - 0.125 W
H8 - 0.1 W
TYPICAL DATA



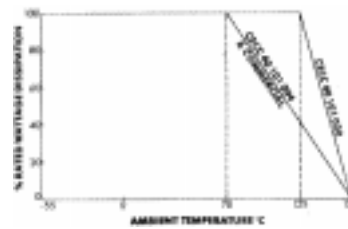
LONG TERM STABILITY
COMMERCIAL
RATINGS AT 125°C
H2 - 1 W
H4 - 0.5 W
H8 - 0.25 W
TYPICAL DATA



DAMP HEAT STEADY STATE
93% RH at 40°C
TYPICAL DATA



DERATING GRAPH
APPROVED AND COMMERCIAL RATINGS



HOW TO ORDER

COMMON PART	RESISTANCE VALUE	TOLERANCE	T.C.R. CODE	RELEASE	FACTORY STOCK CODE
H2	1.0 ohm (1,000 milli ohms) 1R0 10 ohm (10 ohms) 10R 100 ohm (100 ohms) 100R 1K ohm (1,000 ohms) 1K0	A - 0.05% B - 0.1% C - 0.25% D - 0.5% F - 1.0%	A - 5ppm B - 10ppm Y - 15ppm D - 25ppm C - 50ppm Z - 100ppm	A - Part can only be sold with Commercial or C of C release. B - Part can be sold to BS CECC 40101 004, BS CECC 40101 030, Commercial or C of C release. C - Part can be sold to all above approvals and BS CECC 40101 804	Batch Code
H4	10K ohm (10,000 ohms) 10K 100K ohm (100,000 ohms) 100K 1M ohm (1,000,000 ohms) 1M0 10M ohm (10,000,000 ohms) 10M				
H8					



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