Type HOLCO Series

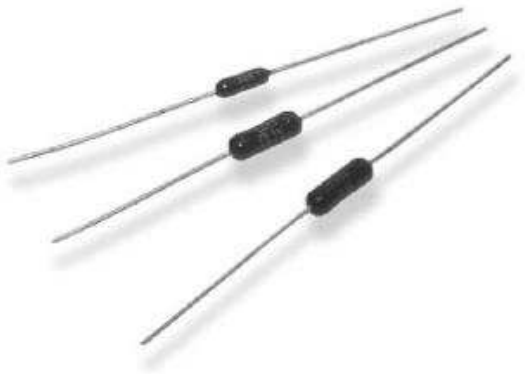
Key Features

Ultra-Precision - Down To 0.05%

Low TCR – Down To 5ppm/°C

Long Term Stability

Up To 1 Watt At 70°C



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 spirallin to achieve close tolerance and high stability resistors. An epoxy coating is applied for environmental and mechanical protection. Commercially the Series i available in two case sizes, from 1 ohm to 4M ohms, tolerances from 0.05% to 1% and TCR's from 5ppm/°C to 100ppm/°C.

Characteristics – Electrical

	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

General Data

Lead Material	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

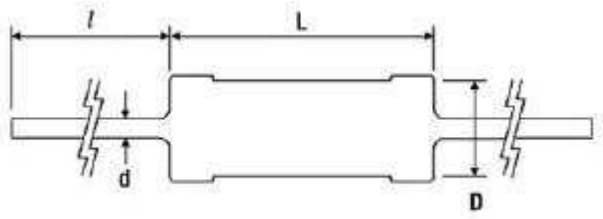
Resistance Range by TCR and Tolerance

TCR	H4P			H4			H8		
Ppm/°C	**0.05%**	**0.1% - 0.25%**	**0.5% - 1.0%**	**0.05%**	**0.1% - 0.25%**	**0.5% - 1.0%**	**0.05%**	**0.1% - 0.25%**	**0.5% - 1.0%**
5	10R-500K	10R-500K	10R-500K	10R-500K	10R-500K	10R-500K	10R-500K	10R-500K	10R-500K
10	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0
15	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0	10R – 1M0
25	10R – 1M0	10R – 2M0	10R – 2M0	10R – 1M0	10R – 2M0	10R – 2M0	10R – 1M0	10R – 2M0	10R – 2M0
50	10R – 1M0	10R – 2M0	10R – 4M0	10R – 1M0	10R – 2M0	10R – 4M0	10R – 1M0	10R – 2M0	10R – 4M0
100	10R – 1M0	10R – 2M0	10R – 4M0	10R – 1M0	10R – 2M0	10R – 4M0	10R – 1M0	10R – 2M0	10R – 4M0

Performance 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
Short Term Overload (6.25 Times Rated 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
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

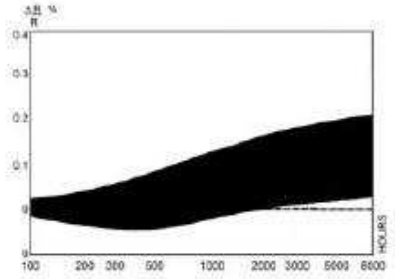
Dimensions



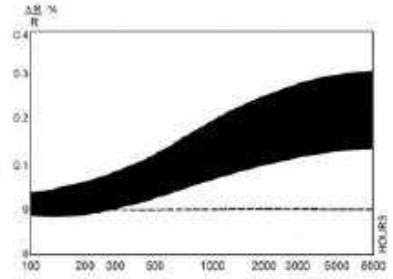
	H4P	H4	H8
Body Length (L) maximum:	10.50mm	10.50mm	7.20mm
Body Diameter (D) maximum:	3.70mm	3.70mm	2.70mm
Lead Diameter (d) maximum:	0.60mm	0.60mm	0.60mm
Lead Length (l) nominal:	30.0mm	30.0mm	30.0mm
Recommended Mounting Pitch:	12.70mm	12.70mm	10.2mm
Weight (g/100 resistors)	40	40	24

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

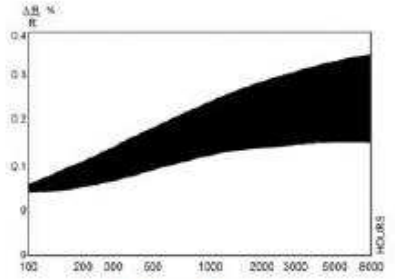
Long Term Stability



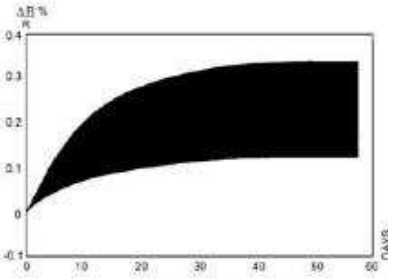
Long Term Stability
BS CECC 40101 004
Ratings at 70°C
H4 - 0.25 W
H8 - 0.125 W



Long Term Stability
BS CECC 40101 030
Ratings at 125°C
H4 - 0.125 W
H8 - 0.1 W

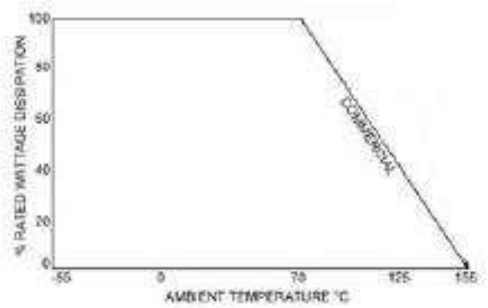


Long Term Stability
Commercial
Ratings at 125°C
H4P - 1W
H4 - 0.5 W
H8 - 0.25 W



Damp Heat Steady State
93% RH at 40°C

Derating



How To Order

H8	100R	B	Y	A
Common Part	**Resistance Value**	**Tolerance**	**TCR Code**	**Release**
H4P H4 H8	1.0Ω- 1R0 10Ω - 10R 1KΩ (1000 Ohms)- 1K0 10KΩ (10,000 ohms) – 10K	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

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TE Connectivity:

2-292161-3 2380312-2 3631B101LL 936348-1 1969656-1 2310537-1 2377783-2 2834055-1 CPF0402B37K4E1 SBCHE154R7K SMW73R0JT ROX05SJ18R 1-962915-1 141991-2 917696-1 SBCHE64R7K 1-794222-0 1743455-2 2005330-1 650075-000 U5254-000005-030PA 175977-2 3-1393225-0 3430B2F51RTDF RH73H2A40MKTN TE50BR39J 1393431-1 CRGCQ2010J3K3 1903112-2 MPT100C18RF