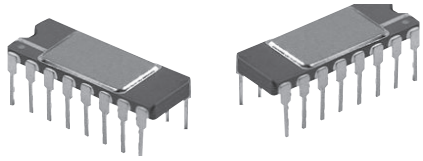
Hermetic, Dual-In-Line Thin Film Resistor, Through Hole Network (Custom)



Designed to meet or exceed MIL-PRF-83401 characteristic “C”

The most advanced thin film technology is put to work in the manufacture of exceptionally stable, precision thin film resistor networks in a variety of popular hermetic-type packages. These networks are based on the utilization of a resistive film possessing outstanding stability throughout board assembly and equipment life.

Manufacturing is performed under rigid process control by a team of specialists having many years experience in the design, fabrication and automatic laser adjustment of several hundred different precision thin film resistor networks. Circuits are designed for specific customer requirements and manufactured according to highly standardized procedures. Testing is conducted in one of the most completely equipped laboratories in the industry.

FEATURES

- True hermetic construction
- Standard 8 pins, 14 pins, 16 pins, 18 pins, 20 pins packages
- Chip and wire construction
- Exceptional stability over time and temperature (500 ppm at + 70 °C at 2000 h)
- Military/aerospace
- Hermetically sealed
- Ideal for military/aerospace applications
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

Pb-free Available

RoHS* COMPLIANT

HALOGEN FREE

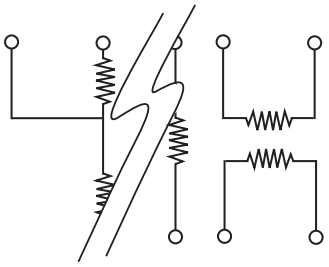
Note

* Pb containing terminations are not RoHS compliant, exemptions may apply

TYPICAL PERFORMANCE

▲	ABSOLUTE	TRACKING
TCR	10	2
	ABSOLUTE	RATIO
TOL.	0.02	0.01

SCHEMATIC



Custom schematics available.
Please consult factory.

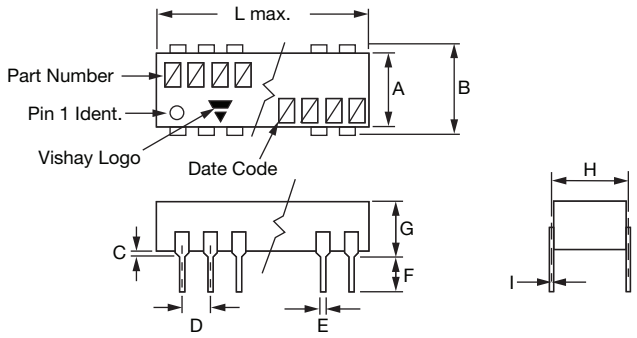
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS		CONDITIONS
Material	Passivated nichrome	Tantalum nitride (1)	-
Pin/Lead Number	8 to 20		-
Resistance Range	50 Ω to 1500 kΩ (total)	50 Ω to 300 kΩ (total)	-
TCR: Absolute	± 10 ppm/°C to ± 25 ppm/°C		- 55 °C to + 125 °C
TCR: Tracking	± 2 ppm/°C (typical less 1 ppm/°C equal values)		- 55 °C to + 125 °C
Tolerance: Absolute	± 0.02 % to ± 1.0 %		+ 25 °C
Tolerance: Ratio	± 0.01 % to ± 0.5 %		+ 25 °C
Power Rating: Resistor	100 mW (per element (typical))		+ 25°C
Power Rating: Package	-		-
Stability: Absolute	500 ppm		2000 h at + 70 °C
Stability: Ratio	150 ppm		2000 h at + 70 °C
Voltage Coefficient	< 0.1 ppm/V		-
Working Voltage	100 V		-
Operating Temperature Range	- 55 °C to + 125 °C		-
Storage Temperature Range	- 55 °C to + 150 °C		-
Noise	< - 30 dB		-
Thermal EMF	< 0.10 µV/°C		-
Shelf Life Stability: Absolute	ΔR ± 0.01 %		1 year at + 25 °C
Shelf Life Stability: Ratio	ΔR ± 0.002 %		1 year at + 25 °C

Note

(1) Tantalum nitride film is custom

DIMENSIONS AND IMPRINTING in inches and millimeters



DIMENSION	INCHES	MILLIMETERS
A	0.295	7.49
B	0.310 ± 0.010	7.88 ± 0.25
C	0.035 ± 0.010	0.89 ± 0.25
D	0.100 non-accum.	2.54
E	0.018 ± 0.002	0.46 ± 0.05
F	0.130 typical	3.30
G	0.130 max.	3.30
H	0.300 typical	7.62
I	0.010 typical	0.25
L (8 Pins)	0.528	13.41
L (14 Pins)	0.710	18.03
L (16 Pins)	0.810	20.57
L (18 Pins)	0.910	23.11
L (20 Pins)	1.010	25.65

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome or tantalum nitride
Substrate Material	Alumina
Body	Ceramic
Terminals	Copper alloy
Tin/Lead Option	Sn63
Lead (Pb)-free Option	Sn96.5, Ag3.0, Cu0.5
Tin/Lead and Lead (Pb)-free Finish	Hot solder dip

ORDERING INFORMATION CHECK LIST

Special requirements should be identified in advance, but as a minimum, you should have the following information ready.

ELECTRICAL	MECHANICAL
1. Resistors, by value and tolerance 2. Reference resistor(s) and matching of which resistors to which reference resistors 3. Resistance by ratio 4. Absolute temperature coefficient of resistivity 5. Temperature tracking of subordinate resistors to reference resistor(s) 6. Maximum operating voltage 7. Resistor power ratings 8. Operating temperature range	1. Maximum allowable seated height (from PC board to top of network) 2. Special marking concerns 3. Schematic pin out of package 4. Specify if lead (Pb)-free

For additional assistance refer to Vishay Dale Thin Film's guide to understanding Thin Film precision.
Resistor networks or application engineering.
All standard products may be ordered directly from Vishay Dale Thin Film.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: HD1xx-xxxUF

H	D		1	x	x	-	x	x	x		U	F
H	D	1	x	x	-	x	x	x	-	x	U	F

GLOBAL MODEL (2 or 3 digits)	CUSTOM PART NUMBER (7 or 9 digits)	PACKAGING
HD	**1xx-xxx** or **1xx-xxx-x**	**UF** = Boxed

Historical Part Number example: 1xx-xxx (for reference purposes only)

1xx-xxx
CUSTOM PART NUMBER

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