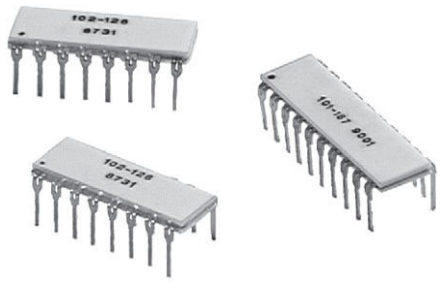
Ceramic Sandwich, Dual-In-Line Thin Film Resistor, Through Hole Network (Custom)



A dual-in-line monolithic ceramic package in a variety of sizes and configurations. A rugged, low cost packaging technique with 4 leads to 20 leads that allows higher resistance integration than chip and wire ceramic packages.

FEATURES

- Gold-to-gold terminations. External leads are attached directly to gold pads on the ceramic substrate by thermo-compression bonding (no internal solder)
- Monolithic construction
- Ceramic package with no cavity. 4 pins to 20 pins.
- Flexibility of lead variations to save PC board space
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

RoHS* Available

HALOGEN FREE

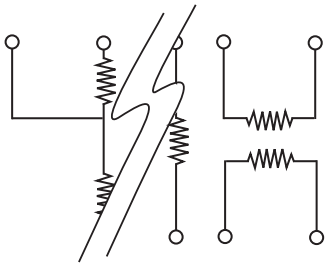
Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	10	2
	ABSOLUTE	RATIO
TOL.	0.1	0.02

SCHEMATIC



Custom schematics available.
Please consult factory

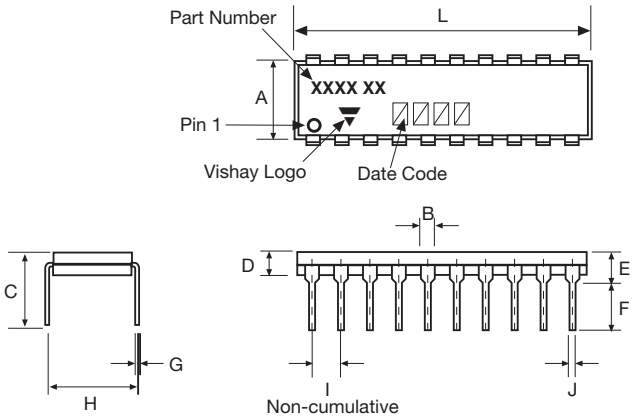
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS		CONDITIONS
Material	Passivated nichrome	Tantalum nitride (1)	-
Pin/Lead Number	4 to 20		-
Resistance Range	100 Ω to 5 MΩ total		-
TCR: Absolute	± 10 ppm/°C	± 25 ppm/°C to ± 100 ppm/°C	-55 °C to +125 °C
TCR: Tracking	± 2 ppm/°C	± 5 ppm/°C	-55 °C to +125 °C
Tolerance: Absolute	± 0.1 % to ± 1.0 %		+25 °C
Tolerance: Ratio	± 0.01 % to ± 0.1 %		+25 °C
Power Rating: Resistor	100 mW (per element (typical))		Maximum at +70 °C
Power Rating: Package	500 mW		Maximum at +70 °C
Stability: Absolute	1000 ppm		2000 h at +70 °C
Stability: Ratio	300 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 +125 °C		-
Noise	< - 30 dB		-
Thermal EMF	< 0.1 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	0.260 max.	6.61
B	0.050	1.27
C	0.160 typical	4.06
D	0.080	2.03
E	0.125	3.18
F	0.125 min.	3.18
G	0.01	0.254
H	0.325	8.25
I	0.100	2.54
J	0.020	0.51
L (4 Pins)	0.220	5.59
L (6 Pins)	0.320	8.13
L (8 Pins)	0.420	10.67
L (10 Pins)	0.520	13.21
L (12 Pins)	0.620	15.75
L (14 Pins)	0.720	18.29
L (16 Pins)	0.820	20.83
L (18 Pins)	0.920	23.37
L (20 Pins)	1.020	25.91

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome or tantalum nitride
Substrate Material	Alumina
Body	Ceramic
Terminals	Copper alloy
Plating	Gold
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

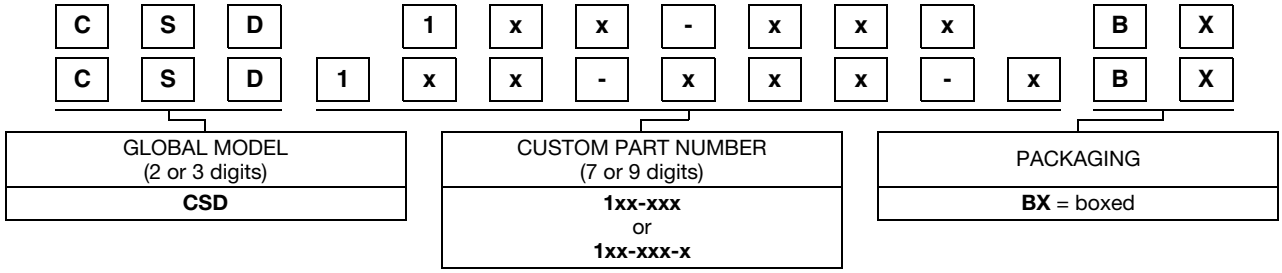
Special requirements should be identified in advance, but as a minimum, you should have the following information ready.

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

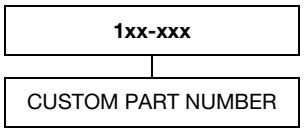
For additional assistance refer to Vishay Dale Thin Film's guide to understanding Thin Film precision.
Resistor networks or application engineering.
All standard products may be ordered directly from Vishay Dale Thin Film.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CSD1xx-xxxBX



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



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