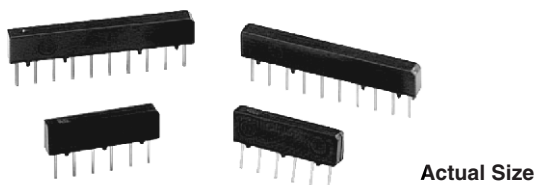


Molded, Commercial, Single In-Line Thin Film Resistor, Through Hole Network (Standard)



Designed to meet MIL-PRF-83401 characteristic "V" and "H"

These resistor networks are available in 6 pins, 8 pins and 10 pins styles in both standard and custom circuits. They incorporate Vishay Dale Thin Film's patented passivated nichrome film to give superior performance on temperature coefficient of resistance, thermal stability, noise, voltage coefficient, power handling and resistance stability. The leads are attached to the metallized alumina substrates by Thermo-Compression bonding. The body is molded thermoset plastic with gold plated copper alloy leads. This product will outperform all of the requirements of characteristic "V" and "H" of MIL-PRF-83401.

FEATURES

- Lead (Pb)-free gold plated terminals standard
- Gold to gold terminations (no internal solder)
- Exceptional ratio stability over time and temperature ($\Delta R \pm 0.015\%$ 2000 h at 70 °C)
- Rugged low profile molded case 6 pins, 8 pins, and 10 pins available
- Compatible with automatic insertion equipment
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available
HALOGEN FREE

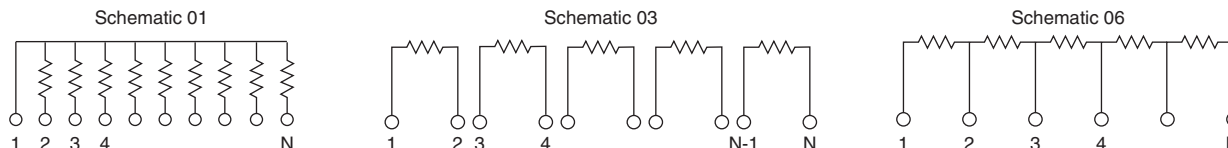
Note

* 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	25	2
	ABSOLUTE	RATIO
TOL.	0.1	0.05

SCHEMATIC



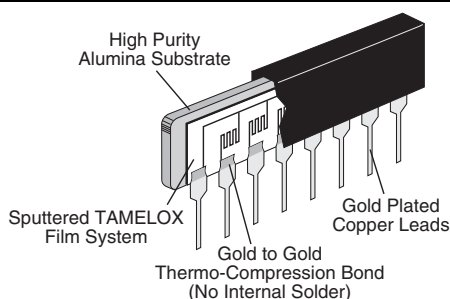
STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	6, 8, 10	-
Resistance Range	100 Ω to 200 k Ω per resistor	-
TCR: Absolute	± 25 ppm/°C (standard)	- 55 °C to + 125 °C
TCR: Tracking	± 2 ppm/°C (typical less 1 ppm/°C equal values) ⁽¹⁾	- 55 °C to + 125 °C
Tolerance: Absolute	$\pm 0.1\%$ to $\pm 1.0\%$	+ 25 °C
Tolerance: Ratio	$\pm 0.05\%$ to $\pm 0.1\%$ to R ₁	+ 25 °C
Power Rating: Resistor	0.100 W (per element typical at + 25 °C)	Maximum at + 70 °C
Power Rating: Package	0.500 W	Maximum at + 70 °C
Stability: Absolute	$\Delta R \pm 0.05\%$	2000 h at + 70 °C
Stability: Ratio	$\Delta R \pm 0.015\%$	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	< 0.08 μ V/°C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01\%$	1 year at + 25 °C
Shelf Life Stability: Ratio	$\Delta R \pm 0.002\%$	1 year at + 25 °C

Note

⁽¹⁾ Consult factory for TCR tracking specifications 01 schematic

DIMENSIONS AND IMPRINTING in inches and millimeters

	DIMENSION	INCHES	MILLIMETERS
	A	0.035	0.89
	B	0.040	1.02
	C	0.100 ± 0.005 non-accum.	2.54 ± 0.13
	D	0.019 ± 0.006 typical	0.48 ± 0.15
	E	0.187 ± 0.010	4.75 ± 0.25
	F	0.135	3.43
	G	0.095	2.41
	H	0.012 ± 0.004	0.31 ± 0.10
	L (6 Pins)	0.583 ± 0.015	14.81 ± 0.38
	L (8 Pins)	0.783 ± 0.015	19.89 ± 0.38
	L (10 Pins)	0.983 ± 0.015	24.97 ± 0.38

CONSTRUCTION

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome or tantalum nitride
Substrate Material	Alumina
Body Molded	Epoxy
Terminals	Copper alloy
Plating	Nickel/gold
Model TSP - Lead (Pb)-free Standard	Gold plated
Model TSPS - Lead (Pb)-free Solder Coated Option	Sn96.5, Ag3.0, Cu0.5
Model TSPL - Tin/Lead Solder Coated Option	Sn63
Tin/Lead and Lead (Pb)-free Finish	Hot solder dip

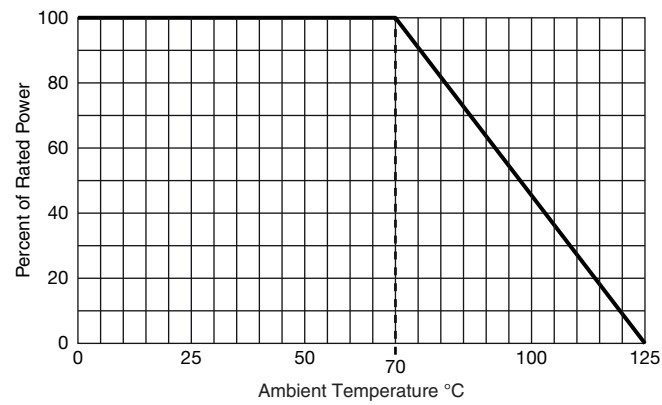
GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: TSP6011002BUF

T		S		P		6		0		1				1		0		0		2		B		U		F					
T		S		P		S		1		0		0		1				1		0		0		2		C		U		F	
GLOBAL MODEL (3 or 4 digits)				PIN COUNT (1 or 2 digits)				SCHEMATICS				TCR CHARACTERISTICS				RESISTANCE				TOLERANCE AND RATIO TOLERANCE				PACKAGING							
TSP (Lead (Pb)-free) (e4) TSPL (Tin/lead) TSPS (Lead (Pb)-free) (e1)				6 8 10				01 ⁽¹⁾ = 5, 7 or 9 resistors with Pin 1 common 03 = 3, 4 or 5 isolated resistors 06 = 5, 7 or 9 series connected				R = ± 25 ppm/°C ⁽²⁾ H = ± 50 ppm/°C K = ± 100 ppm/°C Note ⁽²⁾ 01 Schematic greater than 250 Ω only				First 3 digits are significant figures and the last digit specifies the number of zeroes to follow. e.g.: 1001 = 1K 1002 = 10K				Absolute A = 0.1 % ⁽³⁾ B = 0.1 % C = 0.25 % D = 0.5 % F = 1.0 % Ratio 0.05 % 0.1 % 0.1 % 0.1 % 0.5 %				UF = Tubed							
Note ⁽¹⁾ Consult factory for TCR tracking specifications 01 schematic																Note ⁽³⁾ Tol. available on 1K and up only. R ₁ is reference resistor.															
Historical Part Number example: TSP803R1001F (for reference purposes only)																															
TSP				8				03				R				1001				F											
SERIES				PINS				SCHEMATIC				TCR CHARACTERISTIC				RESISTANCE				TOLERANCE AND RATIO TOLERANCE											



DERATING CURVE





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.