Vishay Dale Thin Film

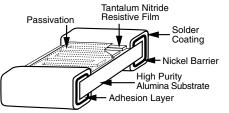
Commercial Thin Film Chip Resistor, Surface-Mount Chip



www.vishay.com

These chip resistors are available in both "top side" and "wraparound" termination styles in a variety of sizes. They incorporate self passivated, enhanced Tantalum Nitride films, to give superior performance on moisture resistance, voltage coefficient, power handling and resistance stability. The terminations consist of an adhesion layer, a leach resistant nickel barrier, and solder coating. This product will out-perform all requirements of characteristic E of MIL-PRF-55342.

CONSTRUCTION



FEATURES

- Moisture resistant
- High purity alumina substrate
- Non-standard values available
- Will pass +85 °C, 85 % relative humidity and RoHS 10 % rated power
- 100 % visual inspected per MIL-PRF-55342
- Non-inductive
- Very low noise and voltage coefficient (< -30 dB)
- Laser-trimmed tolerances to ± 0.05 %
- Wraparound resistance less than 10 m Ω
- Epoxy bondable termination available
- Sulfur resistant (per ASTM B809-95 humid vapor test)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

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
TCR	10
TOL.	0.05

STANDARD ELECTRICAL SPECIFICATIONS			
TEST	SPECIFICATIONS	CONDITIONS	
Material	Tantalum nitride	-	
Resistance Range	1.0 Ω to 3 MΩ	-	
TCR: Absolute	± 10 ppm/°C to ± 100 ppm/°C	-55 °C to +125 °C	
Tolerance: Absolute	± 0.05 % to ± 5 %	+25 °C	
Stability: Absolute	$\Delta R \pm 0.03 \%$	2000 h at 70 °C	
Stability: Ratio	-	-	
Voltage Coefficient	0.1 ppm/V	-	
Working Voltage	75 V to 200 V	-	
Operating Temperature Range	-55 °C to +155 °C	-	
Storage Temperature Range	-55 °C to +155 °C	-	
Noise	< -30 dB	_	
Shelf Life Stability: Absolute	-	-	

COMPONENT RATINGS

CASE SIZE ⁽¹⁾	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE (Ω)
0402	50	75	1.5 to 51.1K
0502	100	75	1.5 to 65K
0505	150	75	10 to 130K
0603	150	75	1.5 to 130K
0705	200	100	1.0 to 310K
0805	200	100	1.0 to 310K
1005	250	100	1.5 to 360K
1010	500	150	1.0 to 600K
1206	400	200	1.5 to 1M
1505	400	150	1.25 to 1M
2208	750	150	2.0 to 1.75M
2010	800	200	1.0 to 2M
2512 ⁽²⁾	2000	200	1.5 to 3M

Notes

⁽¹⁾ 0705 and 0805 are the same (only use 0805 when ordering)

(2) Reference environmental tests table for short time overload test parameters

1

Document Number: 60026

For technical questions, contact: <u>thinfilm@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



HALOGEN

FREE

GREEN

<u>(5-2008)</u>

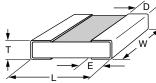


www.vishay.com

Vishay Dale Thin Film

PTN

DIMENSIONS in inches



CASE SIZE	L	w	Т	D	E
0402	0.042 ± 0.008	0.022 ± 0.005	0.012 to 0.033	0.010 ± 0.005	0.010 ± 0.005
0502	0.055 ± 0.006	0.025 ± 0.005	0.012 to 0.033	0.010 ± 0.005	0.015 ± 0.005
0505	0.055 ± 0.006	0.050 ± 0.005	0.012 to 0.033	0.010 ± 0.005	0.015 ± 0.005
0603	0.064 ± 0.006	0.032 ± 0.005	0.020 max.	0.012 ± 0.005	0.015 ± 0.005
0705, 0805 ⁽¹⁾	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
1005	0.105 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
1010	0.105 ± 0.007	0.100 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
1206	0.126 ± 0.008	0.063 ± 0.005	0.015 to 0.033	0.020 + 0.005/ - 0.010	0.020 + 0.005/ - 0.010
1505	0.155 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
2010	0.209 ± 0.009	0.098 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
2208	0.230 ± 0.007	0.075 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
2512	0.259 ± 0.009	0.124 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005

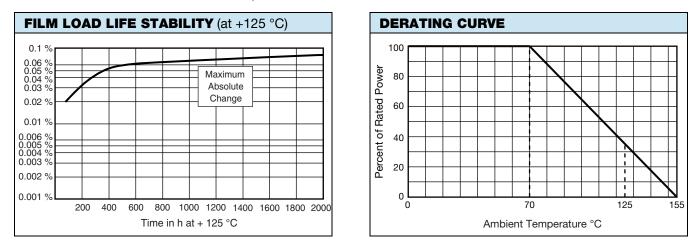
Note

 $^{(1)}\,$ 0705 and 0805 are the same (only use 0805 when ordering)

ENVIRONMENTAL TESTS (Vishay Performance vs. MIL-PRF-55342 Requirements)			
ENVIRONMENTAL TEST		LIMITS MIL-PRF-55342 CHARACTERISTIC "E"	TYPICAL VISHAY PERFORMANCE
Resistance Temperature Character	ristic	± 25 ppm/°C	± 15 ppm/°C
Max. Ambient Temp. at Rated Watt	tage	+70 °C	+70 °C
Max. Ambient Temp. at Power Dera	ating	+150 °C	+150 °C
Thermal Shock	$\Delta \mathbf{R}$	± 0.1 %	± 0.040 %
Low Temperature Operation	ΔR	± 0.1 %	± 0.001 %
Short Time Overload ⁽¹⁾	ΔR	± 0.10 %	± 0.002 %
High Temperature Exposure	$\Delta \mathbf{R}$	± 0.1 %	± 0.04 %
Resistance to Soldering Heat	ΔR	± 0.2 %	± 0.008 %
Moisture Resistance	ΔR	± 0.2 %	± 0.004 %
Life +70 °C at 1000 h	ΔR	± 0.50 %	± 0.02 %
Insulation Resistance		10 000 Ω minimum	> 100 000 MΩ

Note

 $^{(1)}$ 2512 short time overload test is based on 1 W power level below critical value of 20 $k\Omega$



Revision: 08-Jan-2020

2 For technical questions, contact: <u>thinfilm@vishay.com</u> Document Number: 60026

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

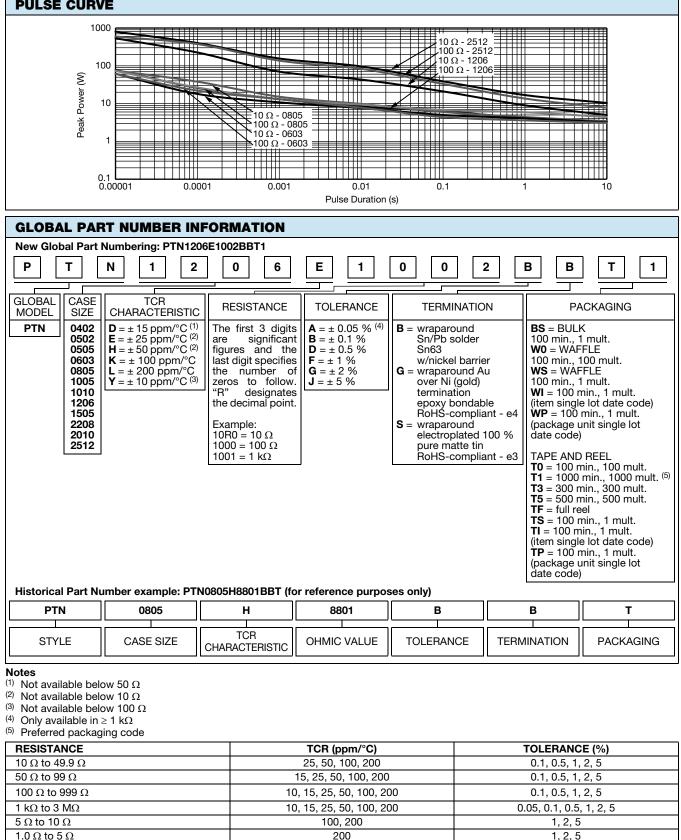


www.vishay.com

Vishay Dale Thin Film

PTN

PULSE CURVE



Revision: 08-Jan-2020

3

Document Number: 60026

For technical questions, contact: thinfilm@vishay.com THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishav.com/doc?91000



Vishay

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.

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Vishay manufacturer:

Other Similar products are found below :

M39006/22-0577H M39006/22-0608H/96 Y00892K49000BR13L VS-12CWQ10FNPBF M8340109M6801GGD03 VS-MBRB1545CTPBF 1KAB100E CCF5020K0FKR36 CCF5010K0FKE36 VSMF4720-GS08 001789X LTO050FR0500JTE3 LVR10R0200FE03 CRCW12063K01FKEA CRCW12063K30FKEAHP 009923A CRHV1206AF80M0FKET CS6600552K000B8768 M39003/01-2289 M39003/01-2784 CW0106K000JE73 672D826H075EK5C CWR06JC105KC CWR06NC475JC MAL202118471E3 MAL213660221E3 MAL213666102E3 MAL215058102E3 MAL219699001E3 PTF56100K00QYEK PTN0805H1502BBTR1K RCL12252K20JNEG RCWL1210R130JNEA RE65G2211C02 RH005220R0FE02 RH005330R0FC02 RH010R0500FC02 132B20103 RH0501R650FC02 RH0507R000FC02 RH1007R000FJ01 RH2503R500FE01 RH254R220FS03 RH-50-40R2-1%-C02 134D336X9075C6 132B00301 DG9426EDQ-T1-GE3 138D685X0075C2 RN55C1242FB14 RN55D3010FB14