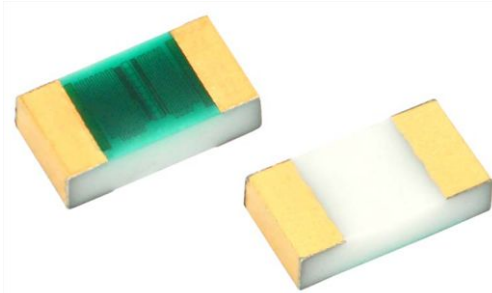


Precision Automotive High Temperature (155 °C at full rated power) Thin Film Chip Resistor, AEC-Q200 Qualified



The terminations consist of an adhesion layer, a leach resistant nickel barrier and gold plating compatible with high temperature solder systems.

CONSTRUCTION



FEATURES

- Resistance range: 1.0 Ω to 1 MΩ
- AEC-Q200 qualified, table 7F
- AEC-Q200 qualified, ESD rated class 1C (< 1 kΩ: 1 kV; > 1 kΩ: 2 kV)
- Laser trimmed to any value
- Intrinsic moisture protected resistor element
- Moisture resistant to MIL-STD-202, method 106
- Tantalum nitride resistor film on alumina substrate
- 100 % visual inspected per MIL-PRF-55342
- Laser-trimmed tolerances to ± 0.1 %
- Load life stability 0.2 % at 1000 h at 155 °C and 100 % rated power
- Very low noise and voltage coefficient (< - 30 dB, < 0.1 ppm/V)
- Sulfur resistant (per ASTM B809-95 humid vapor test)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



TYPICAL PERFORMANCE

	ABSOLUTE
TCR	25
TOL.	0.1

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Tantalum nitride	-
Resistance Range	1.0 Ω to 1 MΩ	-
TCR: Absolute	± 25 ppm/°C to ± 100 ppm/°C	- 55 °C to + 175 °C
Tolerance: Absolute	± 0.1 % to ± 1.0 %	+ 25 °C
Stability: Absolute	± 0.2 %	1000 h at 155 °C and 100 % rated power
Stability: Ratio	Not applicable	-
Voltage Coefficient	Less than 0.1 ppm/V	-
Working Voltage	75 V	-
Operating Temperature Range	- 55 °C to + 250 °C	-
Storage Temperature Range ⁽¹⁾	- 55 °C to + 250 °C	-
Noise	< - 30 dB	-
Shelf Life Stability: Absolute	100 ppm	1 year at 25 °C

Note

⁽¹⁾ Storage temperature rating is for device only.

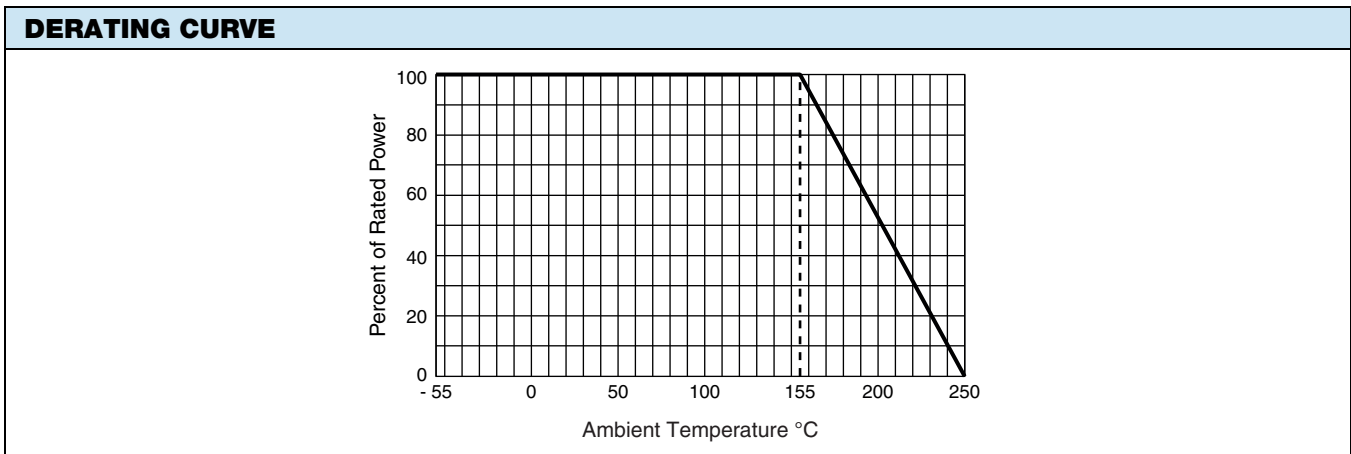
COMPONENT RATINGS

CASE SIZE	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE (Ω)
0402	50	75	1.5 to 51K
0603	150	75	2.75 to 120K
0805	200	100	2.75 to 301K
1206	400	200	1.0 to 1M

DIMENSIONS in inches					
CASE SIZE	L	W	T	D	E
0402	0.042 ± 0.008	0.022 ± 0.005	0.015 ± 0.003	0.010 ± 0.005	0.010 ± 0.005
0603	0.064 ± 0.006	0.032 ± 0.005	0.015 ± 0.003	0.012 ± 0.005	0.015 ± 0.005
0805	0.080 ± 0.006	0.050 ± 0.005	0.015 ± 0.003	0.016 ± 0.008	0.015 ± 0.005
1206	0.126 ± 0.008	0.063 ± 0.005	0.015 ± 0.003	0.020 ± 0.005 / - 0.01	0.020 ± 0.005 / - 0.01

ENVIRONMENTAL TESTS		
ENVIRONMENTAL TEST	CONDITIONS	TYPICAL VISHAY PERFORMANCE
High temperature storage	MIL-STD-202 method 108, 1000 h at 125 °C	± 0.05 %
Temperature cycling	JESD22 method JA-104, 1000 cycles, - 55 °C to + 155 °C	± 0.115 %
Moisture resistance	MIL-STD-202 method 106	± 0.017 %
Biased humidity	MIL-STD-202 method 103, 1000 h at 85 °C, 85 % RH, 10 % rated power	± 0.133 %
Life	MIL-STD-202 method 108, 1000 h at 155 °C	± 0.20 % at 100 % rated power and 155 °C. Effective film temperature is 200 °C.
Mechanical shock	MIL-STD-202 method 213, condition C	± 0.008 %
Vibration	MIL-STD-202 method 204, 10 Hz to 2 kHz	± 0.008 %
Resistance to soldering heat	MIL-STD-202 method 210, condition B	± 0.09 %
Electrostatic discharge	AEC-Q200-002, human body (< 1 kΩ: 1 kV; > 1 kΩ: 2 kV)	± 0.10 % at 2 kV
Solderability	MIL-STD-883 method 2003 para 2.3.1 and J-STD-002	Pass
Die shear	MIL-PRF-55342	Pass
Flame retardance	AEC-Q200-001 para 4.0	Pass

MECHANICAL SPECIFICATIONS	
Resistive element	Tantalum nitride
Substrate material	Alumina
Terminations	Gold (10 μin. min.) over nickel (50 μin. min.)





GLOBAL PART NUMBER INFORMATION																
New Global Part Numbering: PATT0603E1002BGT1																
P	A	T	T	0	6	0	3	E	1	0	0	2	B	G	T	1
GLOBAL MODEL PATT	CASE SIZE 0402 0603 0805 1206	TCR CHARACTERISTIC E = ± 25 ppm/°C H = ± 50 ppm/°C K = ± 100 ppm/°C ⁽¹⁾ L = ± 200 ppm/°C	RESISTANCE The first 3 digits are significant figures and the last digit specifies the number of zeros to follow. "R" designates the decimal point. Example: 10R0 = 10 Ω 1000 = 100 Ω 1002 = 10 kΩ	TOLERANCE B = ± 0.1 % D = ± 0.5 % F = ± 1.0 % G = ± 2.0 % J = ± 5.0 %	TERMINATION G = Wraparound gold over nickel barrier	PACKAGING BULK BS = 100 min., 1 mult WAFFLE WS = 100 min., 1 mult WO = 100 min., 100 mult WI = 100 min., 1 mult (item single lot date code) WP = 100 min., 1 mult (package unit single lot date code) TAPE AND REEL T0 = 100 min., 100 mult T1 = 1000 min., 1000 mult T3 = 300 min., 300 mult T5 = 500 min., 500 mult TF = Full reel TS = 100 min., 1 mult TI = 100 min., 1 mult (item single lot date code) TP = 100 min., 1 mult (package unit single lot date code)										

Note

⁽¹⁾ Characteristic TCR - ($R < 10 \Omega$)

RESISTANCE	TCR (ppm/°C)	TOLERANCE (%)
10 Ω to 1 MΩ	25, 50, 100, 200	0.1, 0.5, 1, 2, 5
5 Ω to 10 Ω ⁽²⁾	100, 200	1, 2, 5
1.0 Ω to 5 Ω ⁽²⁾	200	1, 2, 5

Note

⁽²⁾ Resistance values from 1.0 Ω to 10 Ω are undergoing PPAP qualification; results are expected to be similar to PPAP qualified 10 Ω to 120 kΩ.



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.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.