

THIN FILM CHIP RESISTORS

PTN Series

VISHAY®

Moisture-Resistant Tantalum Nitride Resistive Film

Moisture-Resistant, Tantalum Nitride Precision Thin Film Surface-Mount Chip Resistor



KEY BENEFITS

- Moisture resistant tantalum nitride resistive film
- Wide resistance range qualified from 10 Ω to 3 M Ω
- Absolute TCR of ± 25 ppm/ $^{\circ}$ C
- Tolerances down to ± 0.1 %
- Low noise of < -25 dB
- Low voltage coefficients of 0.1 ppm/V

APPLICATIONS

- Low-noise precision control systems for military, aerospace, telecommunication, and industrial applications

RESOURCES

- Datasheet: PTN - www.vishay.com/doc?60026
- Material categorization: For definitions please see www.vishay.com/doc?99912
- For technical questions contact: thinfilm@vishay.com

RoHS*
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FREE
Available**GREEN**
[5-2008]
Available

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components



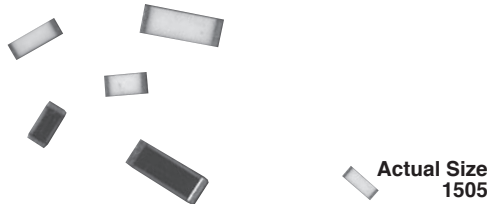


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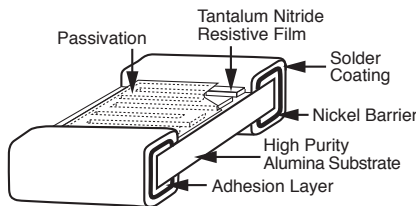
Moisture-Resistant Tantalum Nitride Resistive Film

Commercial Thin Film Chip Resistor, Surface Mount Chip



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 10 % rated power
- 100 % visual inspected per MIL-PRF-55342
- Non-inductive
- Very low noise and voltage coefficient (< - 30 dB)
- Laser-trimmed tolerances to ± 0.1 %
- Wraparound resistance less than 10 mΩ
- Epoxy bondable termination available
- Sulfur resistant (per ASTM B809-95 humid vapor test)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



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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	25
TOL.	0.1

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Tantalum nitride	-
Resistance Range	10 Ω to 3 M Ω	-
TCR: Absolute	± 25 ppm/°C to ± 100 ppm/°C	- 55 °C to + 125 °C
Tolerance: Absolute	± 0.1 % to ± 5 %	+ 25 °C
Stability: Absolute	ΔR ± 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 + 150 °C	-
Storage Temperature Range	- 55 °C to + 150 °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	20 to 51.1K
0502	100	75	20 to 65K
0505	150	75	20 to 130K
0603	150	75	10 to 130K
0705	200	100	10 to 301K
0805	200	100	10 to 301K
1005	250	100	10 to 360K
1010	500	150	50 to 600K
1206	400	200	10 to 1M
1505	400	150	10 to 1M
2208	750	150	10 to 1.75M
2010	800	200	10 to 2M
2512	2000	200	10 to 3M

Note

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