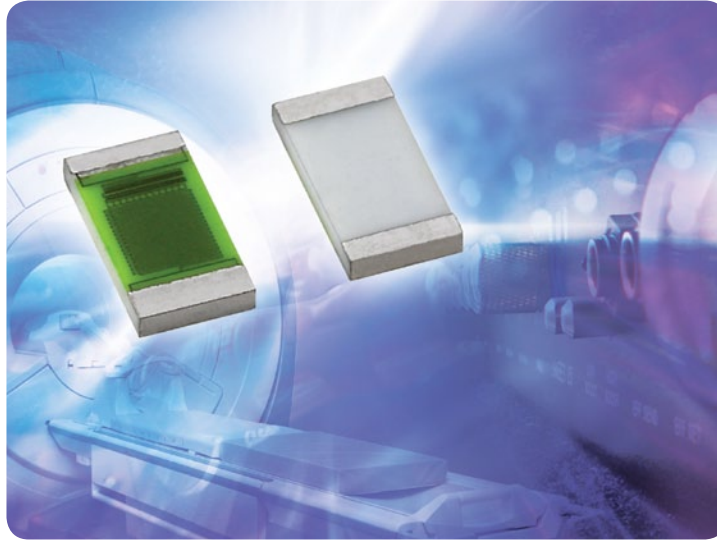


Precision Non-Magnetic Thin Film Chip Resistors



KEY BENEFITS

- Resistance range of 10 Ω to 3 M Ω
- TCR of ± 25 ppm/ $^{\circ}$ C
- Tolerance to ± 0.1 %
- Stable film and performance characteristics: 2000 ppm at 70 $^{\circ}$ C, 10 000 h
- Non-standard resistance values available
- Lead (Pb)-free terminations available
- Very low noise and voltage coefficient: < - 30 dB, 0.1 ppm/V
- UL 94 V-0 flame resistant
- Compliant to RoHS directive 2002/95/EC

APPLICATIONS

- Medical imaging
- High-end audio equipment
- Measurement sensing

RESOURCES

- Datasheet: PNM Series - <http://www.vishay.com/doc?60057>
- For technical questions contact thinfilm@vishay.com



THIN FILM RESISTORS

PNM Series

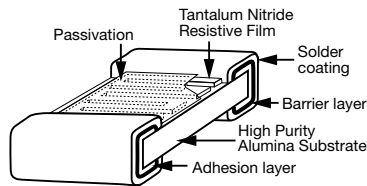


Precision Non-Magnetic Thin Film Chip Resistors



These devices eliminate materials that would disturb magnetic fields applications such as in MRI magnetic resonance imaging machines. The PNM series chip resistor has been carefully engineered with non-magnetic materials to eliminate the effects of these stray magnetic fields on circuit performance, thereby resulting in simplified shielding requirements and improved sound quality in audio applications. Providing signal conditioning without distortion from magnetic fields.

CONSTRUCTION



FEATURES

- Non-magnetic
- 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
- Very low noise and voltage coefficient (< - 30 dB)
- Non-inductive
- Laser-trimmed tolerances to ± 0.1 %
- Wraparound resistance less than 10 m Ω
- Sulfur resistant (per ASTM B809-95 humid vapor test)
- Halogen-free according to IEC 61249-2-21 definition
- Compliant to RoHS Directive 2002/95/EC



RoHS*
COMPLIANT
HALOGEN
FREE
Available

Note

* Pb containing terminations are not RoHS compliant, exemptions may apply

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/ $^{\circ}$ C to ± 100 ppm/ $^{\circ}$ C	-55 $^{\circ}$ C to +125 $^{\circ}$ C
Tolerance: Absolute	± 0.1 % to ± 1.0 %	+25 $^{\circ}$ C
Stability: Absolute	$\Delta R \pm 0.03$ %	-
Stability: Ratio	-	-
Voltage Coefficient	0.1 ppm/V	-
Working Voltage	75 V to 200 V	-
Operating Temperature Range	-55 $^{\circ}$ C to +125 $^{\circ}$ C	-
Storage Temperature Range	-55 $^{\circ}$ C to +150 $^{\circ}$ C	-
Noise	< -30 dB	-
Shelf Life Stability: Absolute	-	-

GLOBAL PART NUMBER INFORMATION

GLOBAL MODEL	CASE SIZE	TCR CHARACTERISTIC	RESISTANCE	TOLERANCE	TERMINATION	PACKAGING
PNM Non-magnetic resistor	0402 0502 0505 0603 0805 1005 1010 1206 1505 2208 2010 2512	E = ± 25 ppm/ $^{\circ}$ C H = ± 50 ppm/ $^{\circ}$ C K = ± 100 ppm/ $^{\circ}$ C	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 1001 = 1 k Ω	B = ± 0.1 % D = ± 0.5 % F = ± 1 % G = ± 2 % J = ± 5 %	B = Wraparound Sn/Pb solder 63 % Sn/ 37 % Pb S = Wraparound lead (Pb)-free solder 96.5 % Sn/3.0 % Ag/ 0.5 % Cu RoHS compliant - e1	BS = BULK 100 min., 1 mult WS = WAFFLE 100 min., 1 mult TAPE AND REEL T0 = 100 min., 100 mult T1 = 1000 min., 1000 mult ⁽¹⁾ T3 = 300 min., 300 mult T5 = 500 min., 500 mult TF = Full reel TS = 100 min., 1 mult

Note

(1) Preferred packaging code