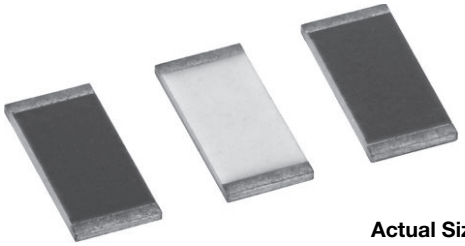
Ultra Precision Low TCR Thin Film Resistor, Surface Mount Chip, ± 2 ppm/°C TCR, 0.01 % Tolerance



Actual Size 0603

Vishay's proven precision thin film wraparound resistors will meet your exact requirements. These resistors are ideal for precision applications requiring low noise, stability, ultra-low temperature coefficient of resistance, and low voltage coefficient. The chip resistors are available in any resistance ohmic value in the range specified below.

FEATURES

- TCR of ± 2 ppm/°C standard
- Tolerances to ± 0.01 %
- Anti-corrosion resistant film with (SPM) special passivation method
- Stable film and performance characteristics (ΔR ± 0.04 % at 70 °C, 10 000 h)
- Non-standard resistance values available
- Very low noise and voltage coefficient (< -30 dB, 0.1 ppm/V)
- UL 94 V-0 flame resistant
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

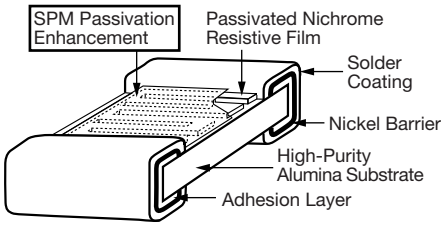
RoHS* Available

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

CONSTRUCTION



TYPICAL PERFORMANCE

	ABSOLUTE
TCR	2
TOL.	0.01

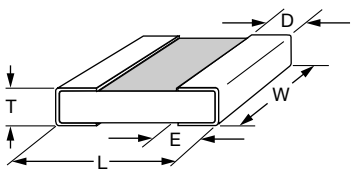
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Resistance Range	100 Ω to 3 MΩ	-
TCR: Absolute	± 2 ppm/°C	-55 °C to +125 °C
Tolerance: Absolute	± 0.1 % to ± 0.01 %	+25 °C
Stability: Absolute	ΔR ± 0.02 %	2000 h at 70 °C
Stability: Ratio	-	-
Voltage Coefficient	± 0.1 ppm/V (typical)	-
Working Voltage	75 V to 200 V	-
Operating Temperature Range	-55 °C to +125 °C	-
Storage Temperature Range	-55 °C to +155 °C	-
Noise	< -35 dB (typical)	-
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at +25 °C

COMPONENT RATINGS

CASE SIZE	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE (Ω)
0603	150	75	100 to 130K
0805	250	100	100 to 260K
1206	400	200	100 to 775K
2010	800	200	150 to 2M
2512	1000	200	200 to 3M

DIMENSIONS in inches

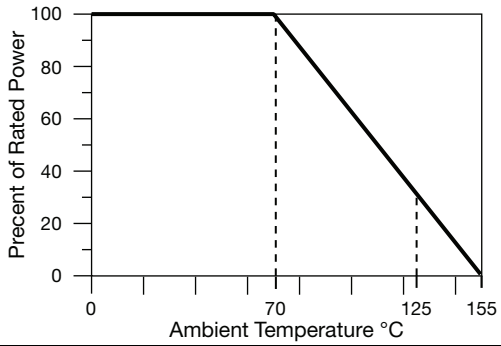


CASE SIZE	L	W	T	D	E
0603	0.064 ± 0.006	0.032 ± 0.005	0.020 max.	0.012 ± 0.005	0.015 ± 0.005
0805	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
1206	0.126 ± 0.008	0.063 ± 0.005	0.015 to 0.033	0.020 + 0.005 / - 0.010	0.020 + 0.005 / - 0.010
2010	0.209 ± 0.009	0.098 ± 0.005	0.015 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

ENVIRONMENTAL TESTS - TYPICAL

ENVIRONMENTAL TEST	10 kΩ Δ*R* ± (%)	100 kΩ Δ*R* ± (%)
Thermal Shock	0.02	0.02
Short Time Overload	0.01	0.01
Low Temperature Operation	0.01	0.01
Resistance to Solder Heat	0.01	0.01
Moisture Resistance	0.02	0.02
High Temperature Exposure	0.02	0.02
Load Life (10 000 h, +70 °C)	0.04	0.04
TCR	± 2 ppm/°C	± 2 ppm/°C

DERATING CURVE



GLOBAL PART NUMBER INFORMATION

P	L	T	U	0	6	0	3	U	1	0	0	1	Q	B	T	1

GLOBAL MODEL

PLTU

CASE SIZE

0603
0805
1206
2010
2512

TCR CHARACTERISTIC

U = ± 2 ppm/°C

RESISTANCE

First 3 digits are significant figures and the last digit specifies the number of zeros to follow.

Example:
1000 = 100 Ω
1001 = 1 kΩ

Use R to indicate decimal point for value below 1 kΩ (max. 5 digits).
982R6 = 982.6 Ω

Values above 1 kΩ (max. 4 digits).
1532 = 15.3 kΩ
1003 = 100 kΩ

TOLERANCE

L = ± 0.01 % [2]
Q = ± 0.02 %
A = ± 0.05 %
B = ± 0.1 %
D = ± 0.5 %
F = ± 1 %

TERMINATION

B = wraparound Sn/Pb solder w/Ni barrier (63 % Sn/37 % Pb w/ nickel barrier)

S = wraparound lead (Pb)-free solder 96.5 % Sn/3.0 % Ag/ 0.5 % Cu RoHS-compliant - e1

PACKAGING

WS = WAFFLE PACK
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. [1]
T3 = 300 min., 300 mult.
T5 = 500 min., 500 mult.
TF = Full reel
TS = 100 min., 1 mult. (item single lot date code)
TI = 100 min., 1 mult. (item single lot date code)
TP = 100 min., 1 mult. (package unit single lot date code)

Notes

[1] Preferred packaging code

[2] L and Q tolerances are available only for resistance values ≥ 250 Ω

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