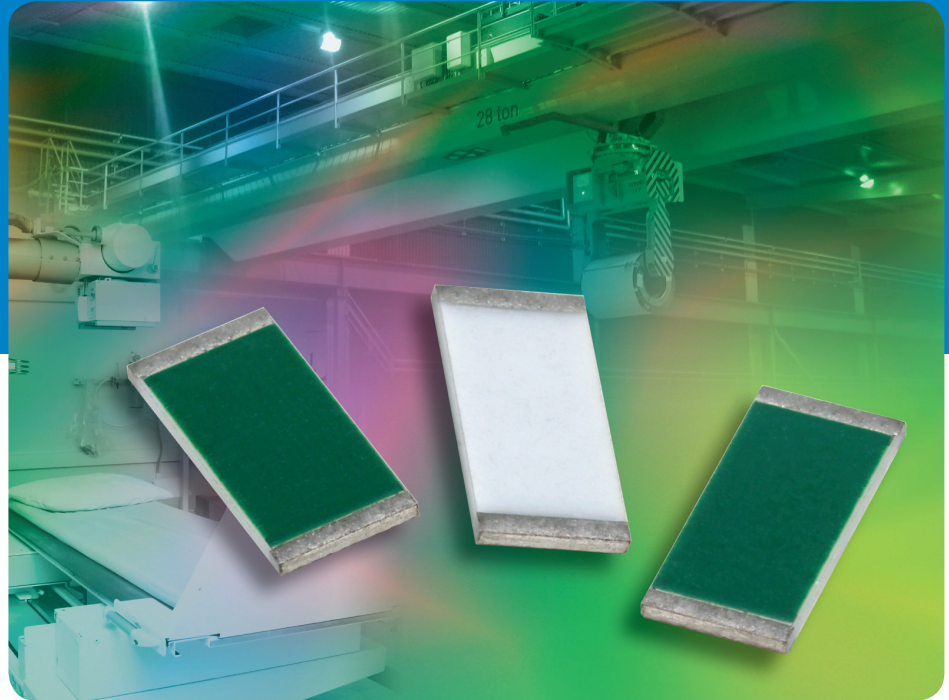




# THIN FILM RESISTORS

PLT Series



## Precision Low TCR Thin Film Chip Resistors

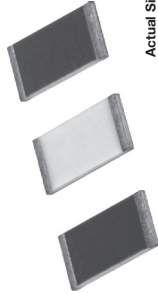
### KEY BENEFITS

- TCR of  $\pm 5$  ppm/ $^{\circ}\text{C}$  (over  $- 55$   $^{\circ}\text{C}$  to  $+ 125$   $^{\circ}\text{C}$ )
- Tolerances to  $\pm 0.02$  %
- Anti-corrosion resistant film with special passivation method (SPM)
- Stable film and performance characteristics: 500 ppm at 70  $^{\circ}\text{C}$ , 10 000 h
- Non-standard resistance values available
- Lead (Pb)-free or lead 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

- Industrial
- Military
- Aerospace
- Medical
- Telecommunications

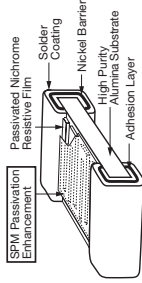
### Precision Low TCR Thin Film Chip Resistors ± 5 ppm/°C TCR, ± 0.02 % Tolerance



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.

#### CONSTRUCTION



#### FEATURES

- TCR of ± 5 ppm/°C standard
- Tolerances to ± 0.02 %
- Anti corrosion resistant film with (SPM) special passivation method
- Stable film and performance characteristics ( $\Delta R \pm 0.04$  % 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
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-2:1 definition



#### TYPICAL PERFORMANCE

	ABSOLUTE
TCR	5
TOL.	0.02

#### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Resistance Range	250 $\Omega$ to 100 k $\Omega$	-
TCR: Absolute	± 5 ppm/°C	-55 °C to + 125 °C
Tolerance: Absolute	± 0.1 % to ± 0.02 %	+ 25 °C
Stability: Absolute	$\Delta R \pm 0.02$ %	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 + 150 °C	-
Noise	< - 35 dB (typical)	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01$ %	1 year at + 25 °C

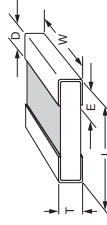
#### COMPONENT RATINGS

CASE SIZE (1)	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE ( $\Omega$ )
0603	150	75	250 to 40K
0705	250	100	250 to 50K
0805	250	100	250 to 50K
1206	400	200	250 to 100K

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

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

#### DIMENSIONS in inches



CASE SIZE	TERM	L	W	T	D	E
0603	B	0.064 ± 0.006	0.032 ± 0.005	0.020 max.	0.012 ± 0.005	0.015 ± 0.005
0705, 0805 (1)	B	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
1206	B	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

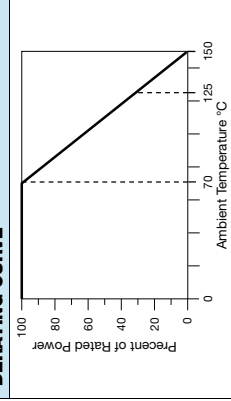
#### Note

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

#### ENVIRONMENTAL TESTS - TYPICAL

ENVIRONMENTAL TEST	10 k $\Omega$ R ± (%)	100 k $\Omega$ 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
Lead Life (10 000 h, + 70 °C)	0.04	0.04
TCR	± 5 ppm/°C	± 5 ppm/°C

#### DERATING CURVE



#### GLOBAL PART NUMBER INFORMATION

P	L	T	0	6	0	3	Z	1	0	0	1	Q	B	T	1
GLOBAL MODEL	PLT	GLOBAL CASE SIZE	0603	0805	1206	TCR CHARACTERISTIC	Z = ± 5 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: 1001 = 1 k $\Omega$ 2500 = 250 $\Omega$ Special values with more than 4 significant figures, use a R for value below 1 k $\Omega$ and a K for values greater than 1 k $\Omega$ to signify a decimal point. 982R6 = 982.6 $\Omega$ 532R41 = 532.41 $\Omega$	TOLERANCE	Q = ± 0.02 % A = ± 0.05 % B = ± 0.1 %	TERMINATION	B = Wraparound Sn/Pb (63 % Sn/37 % Pb w/ nickel barrier) S = Wraparound lead (Pb)-free solder 98.5 % Sn/3.0 % Ag/ 0.5 % Cu RoHS compliant - e1	PACKAGING	WS = WAFFLE PACK TAPE AND REEL T0 = 100 min., 100 mult T1 = 300 min., 300 mult T5 = 500 min., 500 mult TF = Full reel TS = 100 min., 1 mult

#### Note

(1) Preferred packaging code

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