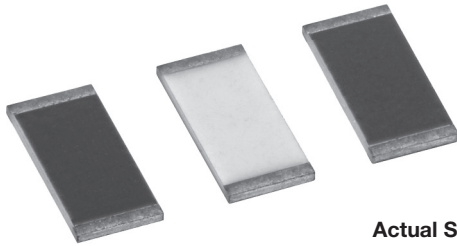
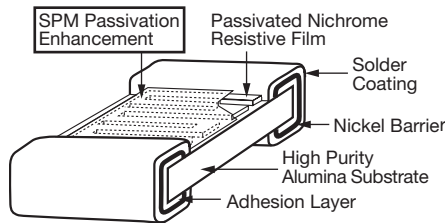


## Precision Low TCR Thin Film Resistor, Surface Mount Chip, $\pm 5 \text{ ppm}/^\circ\text{C}$ TCR, 0.02 % Tolerance


**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  $\pm 5 \text{ ppm}/^\circ\text{C}$  standard
- Tolerances to  $\pm 0.02 \%$
- Anti corrosion resistant film with (SPM) special passivation method
- Stable film and performance characteristics ( $\Delta R \pm 0.04 \%$  at  $70^\circ\text{C}$ , 10 000 h)
- Non-standard resistance values available
- Very low noise and voltage coefficient ( $< -30 \text{ dB}$ ,  $0.1 \text{ ppm}/\text{V}$ )
- UL 94 V-0 flame resistant
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS\***  
COMPLIANT  
HALOGEN  
**FREE**

### TYPICAL PERFORMANCE

	ABSOLUTE
<b>TCR</b>	<b>5</b>
<b>TOL.</b>	<b>0.02</b>

### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
<b>Material</b>	Passivated nichrome	-
<b>Resistance Range</b>	250 $\Omega$ to 100 k $\Omega$	-
<b>TCR: Absolute</b>	$\pm 5 \text{ ppm}/^\circ\text{C}$	$-55^\circ\text{C}$ to $+125^\circ\text{C}$
<b>Tolerance: Absolute</b>	$\pm 0.1 \%$ to $\pm 0.02 \%$	$+25^\circ\text{C}$
<b>Stability: Absolute</b>	$\Delta R \pm 0.02 \%$	2000 h at $70^\circ\text{C}$
<b>Stability: Ratio</b>	-	-
<b>Voltage Coefficient</b>	$\pm 0.1 \text{ ppm}/\text{V}$ (typical)	-
<b>Working Voltage</b>	75 V to 200 V	-
<b>Operating Temperature Range</b>	$-55^\circ\text{C}$ to $+125^\circ\text{C}$	-
<b>Storage Temperature Range</b>	$-55^\circ\text{C}$ to $+150^\circ\text{C}$	-
<b>Noise</b>	$< -35 \text{ dB}$ (typical)	-
<b>Shelf Life Stability: Absolute</b>	$\Delta R \pm 0.01 \%$	1 year at $+25^\circ\text{C}$

### COMPONENT RATINGS

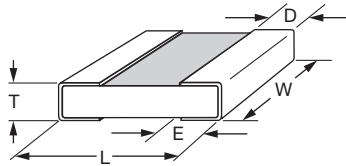
CASE SIZE <sup>(1)</sup>	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE ( $\Omega$ )
0603	150	75	250 to 40K
0705	250	100	250 to 50K
0805	250	100	250 to 50K
1206	400	200	250 to 100K

**Note**

<sup>(1)</sup> 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 $\pm$ 0.006	0.032 $\pm$ 0.005	0.020 max.	0.012 $\pm$ 0.005	0.015 $\pm$ 0.005
0705, 0805 <sup>(1)</sup>	B	0.080 $\pm$ 0.006	0.050 $\pm$ 0.005	0.015 to 0.033	0.016 $\pm$ 0.008	0.015 $\pm$ 0.005
1206	B	0.126 $\pm$ 0.008	0.063 $\pm$ 0.005	0.015 to 0.033	0.020 + 0.005/- 0.010	0.020 + 0.005/- 0.010

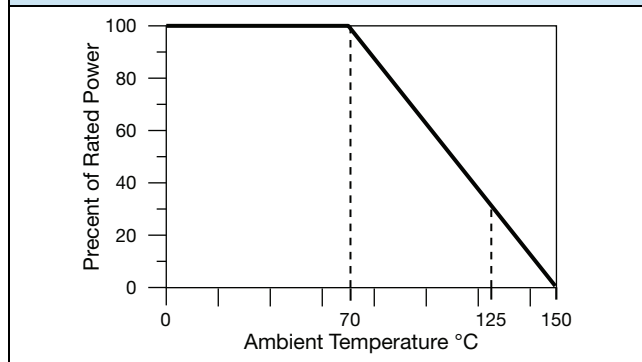
**Note**

<sup>(1)</sup> 0705 and 0805 are the same (only use 0805 when ordering)

**ENVIRONMENTAL TESTS - TYPICAL**

ENVIRONMENTAL TEST	10 k $\Omega$ $\Delta$ R $\pm$ (%)	100 k $\Omega$ $\Delta$ R $\pm$ (%)
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 $^\circ$ C)	0.04	0.04
TCR	$\pm 5 \text{ ppm}/^\circ\text{C}$	$\pm 5 \text{ ppm}/^\circ\text{C}$

**DERATING CURVE**



**GLOBAL PART NUMBER INFORMATION**

P	L	T	0	6	0	3	Z	1	0	0	1	Q	B	T	1
GLOBAL MODEL	CASE SIZE	TCR CHARACTERISTIC	RESISTANCE			TOLERANCE	TERMINATION	PACKAGING							
PLT	0603 0805 1206	Z = $\pm 5 \text{ ppm}/^\circ\text{C}$	<p>The first 3 digits are significant figures and the last digit specifies the number of zeros to follow. "R" designates the decimal point.</p> <p>Example: 1001 = 1 k<math>\Omega</math> 2500 = 250 <math>\Omega</math></p> <p>Special values with more than 4 significant figures, use a R for value below 1 k<math>\Omega</math> and a K for values greater than 1 k<math>\Omega</math> to signify a decimal point.</p> <p>982R6 = 982.6 <math>\Omega</math> 532R41 = 532.41 <math>\Omega</math></p>			<p>Q = <math>\pm 0.02 \%</math> A = <math>\pm 0.05 \%</math> B = <math>\pm 0.1 \%</math></p>	<p>B = Wraparound Sn/Pb solder w/Ni barrier (63 % Sn/37 % Pb w/ nickel barrier)</p> <p>S = Wraparound lead (Pb)-free solder 96.5 % Sn/3.0 % Ag/ 0.5 % Cu RoHS compliant - e1</p>	<p>WS = WAFFLE PACK</p> <p>TAPE AND REEL</p> <p>T0 = 100 min., 100 mult T1 = 1000 min., 1000 mult <sup>(1)</sup> T3 = 300 min., 300 mult T5 = 500 min., 500 mult TF = Full reel TS = 100 min., 1 mult</p>							

**Note**

<sup>(1)</sup> Preferred packaging code



## Disclaimer

All product specifications and data are subject to change without notice.

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