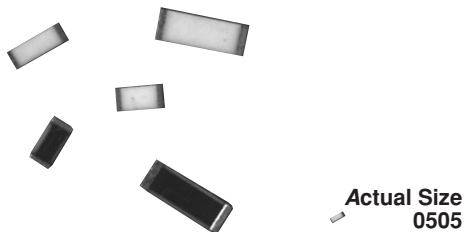


## Commercial Thin Film Chip Resistors



For applications requiring low noise, stability, low temperature coefficient of resistance, and low voltage coefficient, all VISHAY's proven precision thin film wraparound resistors will meet your exact requirements. Manufactured with the same material and processes as QPL and manufactured in a QPL facility.

### CONSTRUCTION



### FEATURES

- Standard stocked (custom sizes available)
- High purity alumina substrate
- High stability Tamelox® resistive film
- 100% visual inspected per MIL-PRF-55342
- Pre-tinned terminations over nickel barrier (Gold available)
- Very low noise and voltage coefficient
- Non-inductive
- Laser-trimmed tolerances to  $\pm 0.1\%$
- In-lot tracking less than 5ppm/ $^{\circ}\text{C}$

### TYPICAL PERFORMANCE

	ABS
TCR	25
TOL	0.1

### STANDARD ELECTRICAL SPECIFICATIONS

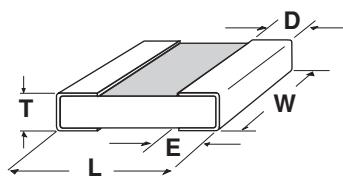
TEST	SPECIFICATIONS		CONDITIONS	
<b>MATERIAL</b>	<b>TAMELOX®</b>			
<b>Absolute TCR</b>	$\pm 25\text{ppm}/^{\circ}\text{C}$ (Available to $\pm 10\text{ppm}/^{\circ}\text{C}$ )		- 55°C to + 125°C	
<b>Absolute Tolerance:</b>	$\pm 0.1\%$ (Available to $\pm 0.02\%$ )		+ 25°C	
<b>Power Rating:</b>	See table			
<b>Voltage Coefficient</b>	0.1ppm/Volt typical			
<b>Working Voltage</b>	See table			
<b>Operating Temperature Range</b>	- 55°C to + 125°C			
<b>Storage Temperature Range</b>	- 55°C to + 150°C			
<b>Noise</b>	< - 35dB Typical			

CASE SIZE	POWER RATING - (mW)		MAX WORKING VOLTAGE		RESISTANCE RANGE - (OHMS)	
	$\geq 0.1\%$	< 0.1%	$\geq 0.1\%$	< 0.1%	$\geq 0.1\%$	< 0.1%
0505	150	150	75	75	20 – 301K	1K – 301K
0603	200	150	75	75	10 – 175K	1K – 175K
0705	250	200	100	100	10 – 475K	1K – 475K
0805	250	200	100	100	10 – 475K	1K – 475K
1005	250	250	100	100	10 – 649K	1K – 649K
1010	500	500	150	100	50 – 1M	1K – 1M
1206	400	400	200	200	10 – 1M	1K – 1M
1505	400	400	150	150	10 – 1M	1K – 1M
2208	800	750	150	150	10 – 1.75M	1K – 1M
2010	800	750	200	150	10 – 2M	1K – 1M
2512	1000	750	200	200	10 – 3M	1K – 1M

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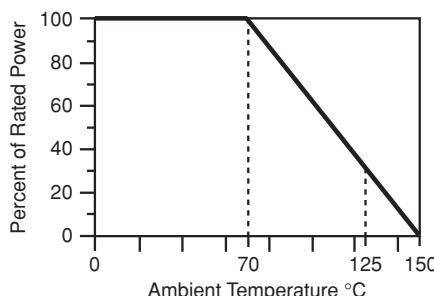
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**DIMENSIONS** in inches


CASE SIZE	TERM	L	W	T	D	E
0505	B	0.055 ± 0.006	0.050 ± 0.005	0.012 to 0.033	0.010 ± 0.005	0.015 ± 0.005
0603	B	0.064 ± 0.006	0.032 ± 0.005	0.020 Max.	0.012 ± 0.005	0.015 ± 0.005
0705	B	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
0805	B	0.080 ± 0.006	0.050 ± 0.005	0.015 to 0.033	0.016 ± 0.008	0.015 ± 0.005
1005	B	0.105 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
1010	B	0.105 ± 0.007	0.100 ± 0.005	0.015 to 0.033	0.015 ± 0.005	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
1505	B	0.155 ± 0.007	0.050 ± 0.005	0.015 to 0.033	0.015 ± 0.005	0.015 ± 0.005
2010	B	0.209 ± 0.009	0.098 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
2208	B	0.230 ± 0.007	0.075 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005
2512	B	0.259 ± 0.009	0.124 ± 0.005	0.015 to 0.033	0.020 ± 0.005	0.020 ± 0.005

ENVIRONMENTAL TESTS		
Environmental Test	10K ohms $\Delta R \pm (%)$	100K ohms $\Delta R \pm (%)$
Thermal Shock	0.02	0.02
Short Time Overload	0.01	0.01
Low Temperature Operation	0.01	0.01
Resistance to Solder Heat	0.04	0.03
Moisture Resistance	0.02	0.01
High Temperature Exposure	0.03	0.06
Load Life (10,000 hrs, + 70°C)	0.05	0.05
TCR	$\pm 25\text{ppm}/^\circ\text{C}$	$\pm 25\text{ppm}/^\circ\text{C}$

**DERATING CURVE**

**How to Order**

Style	Case Size	TCR Characteristic	Ohmic Value	Tolerance	Termination	Package
<b>P</b> Series	<b>0505</b>	<b>Y = ±10 ppm/°C</b>	The first 3 digits are significant figures and the last digit specifies the number of zeros to follow. "R" designates the decimal point. e.g. <b>10R0</b> = 10 ohms <b>1000</b> = 100 ohms <b>1001</b> = 1K ohms	<b>P</b> = ±0.02%	<b>B</b> = Solderable (solder coat w/ nickel barrier) <b>G</b> = Epoxy/Solderable AU over Ni	<b>T</b> = Tape & Reel <b>W</b> = Waffle Pack
	<b>0603</b>	<b>D = ±15 ppm/°C</b>		<b>W</b> = ±0.05%		
	<b>0705</b>	<b>E = ±25 ppm/°C</b>		<b>B</b> = ±0.1%		
	<b>0805</b>	<b>H = ±50 ppm/°C</b>		<b>D</b> = ±0.5%		
	<b>1005</b>	<b>K = ±100 ppm/°C</b>		<b>F</b> = ±1.0%		
	<b>1010</b>			<b>G</b> = ±2.0%		
	<b>1206</b>	(≤25 ohms = H only)		<b>J</b> = ±5.0%		
	<b>1505</b>					
	<b>2208</b>					
	<b>2010</b>					
	<b>2512</b>					

Example: **P0705H6801BBT** is a thin film wraparound chip resistor, 75 x 50 mil, with a TCR of ±50 ppm/°C, a value of 6800 ohms, ±0.1% tolerance with solder coated nickel barrier terminations, on tape and reel packaging.

Consult factory for other sizes.