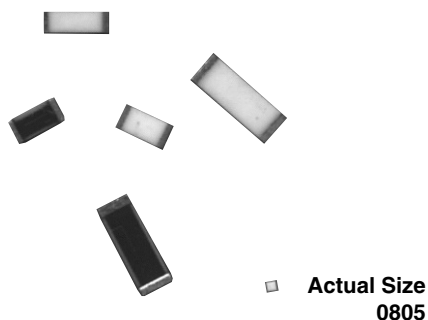


Low Value (0.03 Ω to 10 Ω) Thin Film Chip Resistors

**SURFACE MOUNT
CHIPS**


With extremely low resistances and high power capabilities, VISHAY's proven and unique ultra-low value resistors can be used in your hybrid or surface mount applications. These resistors are available with solderable or weldable terminations.

FEATURES

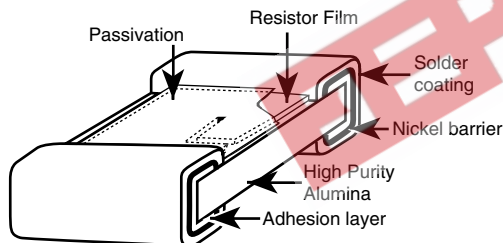
- Lead (Pb)-free or Sn/Pb terminations available
- Homogeneous **nickel alloy film**
- No inductance for high frequency application
- Alumina substrates for high power handling capability (2 W max power rating)
- Pre-soldered or gold terminations
- Epoxy bondable termination available


RoHS*
COMPLIANT

TYPICAL PERFORMANCE

	ABS
TCR	300
TOL	1.0

CONSTRUCTION



VALUE AND MINIMUM TOLERANCE

VALUE (Ω)	MINIMUM TOLERANCE
0.1	$\pm 2.0 \%$
0.25	$\pm 1.0 \%$
0.5	$\pm 1.0 \%$
1.0	$\pm 1.0 \%$
2.0	$\pm 1.0 \%$
10.0	$\pm 1.0 \%$
< 0.1	20 %

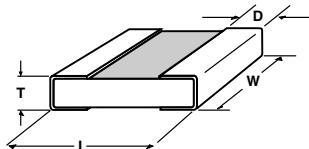
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Case Sizes	0505, 0705, 0805, 1005, 1020, 1206, 1505, 2010, 2515	
Resistance Range	0.03 Ω to 10.0 Ω	
Absolute TCR	± 300 ppm/ $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
Noise	< - 30 dB typical	
Power Rating	up to 2.0 W	at + 70 $^{\circ}$ C

(Resistor values beyond ranges shall be reviewed by the factory)

CASE SIZE	0505	0705	0805	1005	1020	1206	1505	2010	2512
Power Rating - mW	125	200	200	250	1000	330	500	1000	2000
Min. Resistance - Ω	0.05	0.10	0.10	0.15	0.03	0.10	0.25	0.17	0.18
Max. Resistance - Ω	5.0	6.0	6.0	10.0	3.0	10.0	10.0	10.0	10.0

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

**L-NS**Low Value (0.03 Ω to 10 Ω) Thin Film Chip Resistors Vishay Thin Film**DIMENSIONS** in inches and millimeters

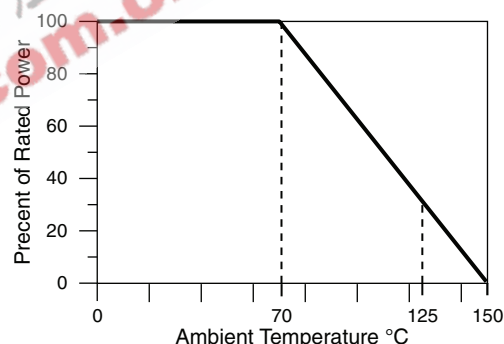
CASE SIZE	SIZE							
	L		W		T		D	
	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
	+ 0.010/- 0.005	+ 0.25/- 0.13	± 0.005	± 0.13	MAX.		+ 0.010/- 0.005	+ 0.25/- 0.13
0505	0.050	1.27	0.050	1.27	0.020	0.51	0.016	0.41
0805*, 0705*	0.075	1.91	0.050	1.27	0.020	0.51	0.021	0.53
1005	0.100	2.54	0.050	1.27	0.030	0.76	0.021	0.53
1020	0.100	2.54	0.200	5.08	0.030	0.76	0.015	0.38
1206	0.126	3.20	0.063	1.60	0.030	0.76	0.020	0.51
1505	0.150	3.81	0.050	1.27	0.030	0.76	0.021	0.53
2010	0.200	5.08	0.100	2.54	0.030	0.76	0.019	0.48
2512	0.250	6.35	0.125	3.18	0.030	0.76	0.019	0.48

MECHANICAL SPECIFICATIONS

Resistive Element	Nickel Alloy
Substrate Material	Alumina
Terminals	Pre-soldered or gold
Lead (Pb)-free Option	96.5 % Sn, 3.0 % Ag, 0.5 % Cu
Lead (Pb)-free Finish	Hot Solder Dip

ENVIRONMENTAL TEST

TEST	1 Ω $\Delta R \pm \%$
Thermal Shock	0.06
Short Term Overload	0.06
Low Temperature Operation	0.03
Resistance to Solder Heat	0.05
Moisture Resistance	0.35
High Temp. Exposure	0.35
Load Life (2000 h at + 70 °C)	0.40
TCR	± 235 ppm/°C

DERATING CURVE**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: L-1206M1R00GBT1 (preferred part number format)

L	-	1	2	0	6	M	1	R	0	0	G	B	T	1
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GLOBAL MODEL	CASE SIZE	TCR CHARACTERISTICS	OHMIC VALUE	TOLERANCE	TERMINATION	PACKAGING
L = Low value wraparound chip resistor	0505 0805 1005 1020 1206 1505 2010 2512	M = 300 ppm/°C N = 350 ppm/°C O = 400 ppm/°C P = 500 ppm/°C	First 3 digits are significant figures and the last digit specifies the number of zeroes to follow. "R" designates the decimal point. Example: 0R10 = 0.1 Ω 1R60 = 1.6 Ω	F = 1 % G = 2 % H = 3 % J = 5 % K = 10 % L = 20 %	B = Wraparound Sn/Pb solder 63 % Sn/37 % Pb w/ nickel barrier G = Wraparound Au over Ni (gold) termination epoxy bondable RoHS compliant - e4 W = Top side wire bondable Au (gold) RoHS compliant - e4 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 T3 = 300 Min 300 Mult T5 = 500 Min 500 Mult TF = Full Reel TS = 100 Min 1 Mult

Historical Part Number example: L1206M1R00HBT (will continue to be accepted)

L	1206	M	1R00	H	B	T
STYLE	CASE SIZE	TCR CHARACTERISTICS	OHMIC VALUE	TOLERANCE	TERMINATION	PACKAGING



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