

## Ultra Low Value Thin Film Resistors



### FEATURES

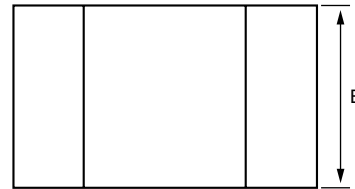
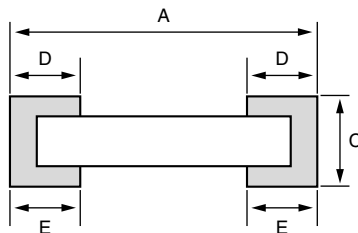
- NiCr + Ta<sub>2</sub>O<sub>5</sub> resistive layer
- Pre-soldered or gold terminations
- No inductance for high frequency applications
- Alumina substrates for high power handling capability
- Resistance range: 0.1 Ω to 10 Ω
- TCR: down to ± 50 ppm/°C
- Power rating: up to 1 W at + 70 °C



Available  
**RoHS\***  
COMPLIANT

With extremely low resistance and high power capabilities, these ultra low value resistors are available with solderable or weldable terminations.

### DIMENSIONS in millimeters [inches]



CASE SIZE	DIMENSION				POWER RATING mW	LIMITING ELEMENT VOLTAGE V	RESISTANCE RANGE
	A	B	C	D/E			
	MAX. TOL. + 0.64 [+ 0.025] MIN. TOL. - 0.13 [- 0.005]	MAX. TOL. + 0.26 [+ 0.010] MIN. TOL. - 0.13 [- 0.005]	MAX. TOL. + 0.64 [+ 0.025] MIN. TOL. - 0.13 [- 0.005]	MAX. TOL. + 0.13 [+ 0.005] MIN. TOL. - 0.13 [- 0.005]			
0505	1.27 [0.050]	1.27 [0.050]	0.38 [0.015]	0.38 [0.015]	125	50	0.1 Ω.. 10 Ω
0603	1.52 [0.060]	0.75 [0.030]	0.38 [0.015]	0.38 [0.015]	125	50	0.1 Ω.. 10 Ω
0705 0805	1.91 [0.075]	1.27 [0.050]	0.38 [0.015]	0.38 [0.015]	200	50	0.1 Ω.. 10 Ω
1005	2.54 [0.100]	1.27 [0.050]	0.38 [0.015]	0.38 [0.015]	250	50	0.1 Ω.. 10 Ω
1206	3.20 [0.126]	1.60 [0.063]	0.38 [0.015]	0.38 [0.015]	330	50	0.1 Ω.. 10 Ω
1505	3.81 [0.150]	1.27 [0.050]	0.38 [0.015]	0.38 [0.015]	500	50	0.1 Ω.. 10 Ω
2010	5.08 [0.200]	2.54 [0.100]	0.38 [0.015]	0.38 [0.015]	1000	50	0.1 Ω.. 10 Ω

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

**ELECTRICAL SPECIFICATIONS**

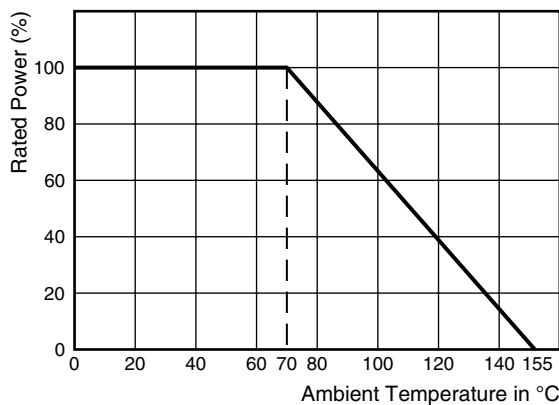
Resistance range: 0.1  $\Omega$  to 10  $\Omega$   
 Resistance tolerance:  $\pm 1\%$  to  $\pm 10\%$   
 Power dissipation: 0.125 mW to 1 W at + 70 °C  
 Temperature coefficient: down to  $\pm 50$  ppm/°C

**MECHANICAL SPECIFICATIONS**

Substrate: Alumina  
 Resistive layer: NiCr + Ta<sub>2</sub>O<sub>5</sub>  
 Coating: Silicone  
 Terminations: Solderable  
**B type:** SnPb over nickel barrier  
**N type:** SnAg over nickel barrier  
**G type:** gold over nickel barrier

**CLIMATIC SPECIFICATIONS**

Operating temp. range: - 55 °C to + 155 °C

**POWER DERATING CURVE****TOLERANCE AND TCR VERSUS OHMIC VALUE**

MINIMUM TOLERANCE	OHMIC VALUES	BEST TCR ppm/°C
$\pm 10\%$	0.1 $\Omega$	$\pm 300$
$\pm 5\%$	0.25 $\Omega$	$\pm 200$
$\pm 2\%$	0.5 $\Omega$	$\pm 100$
$\pm 1\%$	1 $\Omega$	$\pm 100$
$\pm 1\%$	5 $\Omega$	$\pm 50$

**PACKAGING**

Several types of packaging are proposed: tube, waffle-pack and tape and reel.

SIZE	NUMBER OF PIECES PER PACKAGE				TAPE WIDTH
	TUBE	WAFFLE PACK 2" x 2"	TAPE AND REEL		
			MIN.	MAX.	
0505	500	100	100	4000	8 mm
0603					
0805 0705					
1005					
1206	250	00	100	2000	12 mm
1505					
2010	100		100	2000	12 mm

**PERFORMANCE**

TESTS	CONDITIONS	VALUES AND DRIFT	
		MIL-R-55342 REQUIREMENTS	TYPICAL PERFORMANCES
		Thermal shock	MIL-R-55342 C MIL-STD-702-Method 107
Short time overload	MIL-R-55342 C PARA 3.10.4.7.5	$\pm 0.10\%$	$\pm 0.01\%$
Low temperature operation	MIL-R-55342 C PARA 3.9 and 4.7.4	$\pm 0.25\%$	$\pm 0.01\%$
Resistance to solder heat	MIL-R-55342 C PARA 3.12, 4.7.7, 4.7.1.2	$\pm 0.25\%$	$\pm 0.04\%$
Moisture resistance	MIL-R-55342 C PARA 3.13 and 4.7.8 MIL-STD-202-Method 106	$\pm 0.40\%$	$\pm 0.01\%$
High temperature	MIL-R-55342 C PARA 3.11 and 4.7.6	$\pm 0.20\%$	$\pm 0.075\%$
Load life	MIL-R-55342 C 2000 h Pn at 70 °C MIL-STD-202-Method 108	$\pm 0.50\%$	$\pm 0.15\%$



GLOBAL PART NUMBER INFORMATION																
New Global Part Numbering: L0805K1R00FBT0028																
L	0	8	0	5	K	1	R	0	0	F	B	T	0	0	2	8
GLOBAL MODEL	SIZE		TCR		VALUE		TOLERANCE		TERMINATION		PACKAGING		OPTION			
L	0505 0603 0705 0805 1005 1206 1505 2010		H = ± 50 ppm K = ± 100 ppm L = ± 200 ppm M = ± 300 ppm		R designated decimal point		F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 10 %		B: SnPb over nickel barrier N: SnAg over nickel barrier G: gold over nickel barrier		blank: Waffle pack T: Tape and reel		leave blank if no option			
Historical Part Number example: L 0805 K 1R00 1% B T R0028																
L	0805		K		1R00		1%		B		T		R0028			
MODEL	SIZE		TCR		VALUE		TOLERANCE		TERMINATION		PACKAGING		OPTION			



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