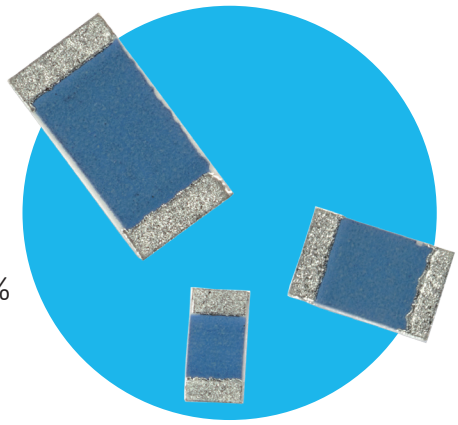
Resistors

Water Insoluble Nitride Thin Film Precision Chip Resistors

WIN Series

- Inherent moisture protection superior to that of passivated nichrome chip resistors
- High stability in humid and polluted environments
- Typical 85°C, 85%RH biased humidity 2000 hour stability <0.1%
- Typical moisture resistance stability ±100ppm
- Precision ±0.1% tolerance and ±25ppm/°C TCR
- Anti-sulfur terminations



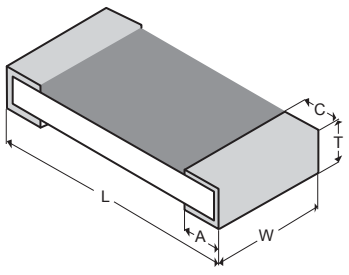
All parts are Pb-free and comply with EU Directive 2011/65/EU (RoHS2)

Electrical Data

		T0603	T0805	T1206
Power rating @ 70°C	watts	0.1	0.25	0.33
Resistance range	ohms	10R to 100K	10R to 267K	10R to 1M0
Limiting element voltage (maximum voltage)	Vdc or rms	75	100	200
Resistance tolerance	%	±0.1		
TCR	ppm/°C	±25		
Standard values		E24, E96		
Ambient temperature range	°C	-65 to +150		

Physical Data

Dimensions in mm & (inch) and weight in mg						
	L	W	T	C	A	Wt. nom
T0603	1.58 ± 0.15 (0.062 ± 0.006)	0.80 ± 0.10 (0.031 ± 0.004)	0.45 ± 0.10 (0.018 ± 0.004)	0.27 ± 0.20 (0.011 ± 0.008)	0.34 ± 0.20 (0.013 ± 0.008)	2.0
T0805	2.02 ± 0.15 (0.080 ± 0.006)	1.28 ± 0.15 (0.050 ± 0.006)	0.45 ± 0.10 (0.018 ± 0.004)	0.31 ± 0.20 (0.012 ± 0.008)	0.40 ± 0.20 (0.016 ± 0.008)	4.3
T1206	3.15 ± 0.15 (0.124 ± 0.006)	1.57 ± 0.15 (0.062 ± 0.006)	0.50 ± 0.15 (0.020 ± 0.006)	0.45 ± 0.25 (0.018 ± 0.010)	0.52 ± 0.25 (0.020 ± 0.010)	9.6



Construction

Conductors, thin film resistive element and epoxy outer protection are applied to an alumina substrate. The chips are supplied with wrap-around terminations suitable for soldering. The terminations have an electroplated nickel barrier and 100% matt tin finish.

Marking & Solvent Resistance

WIN resistors have no marking on the component body. The body protection is resistant to all normal cleaning solvents suitable for printed circuits

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Bi technologies IRC Welwyn

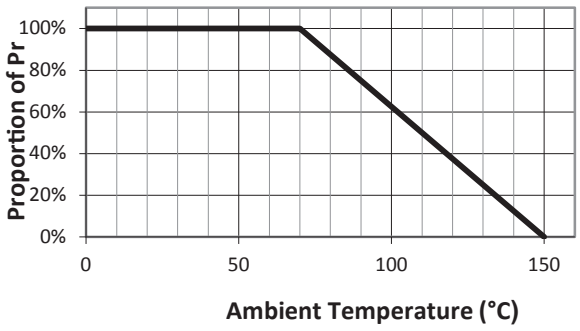
www.ttelectronicsresistors.com

© TT Electronics plc

Performance Data

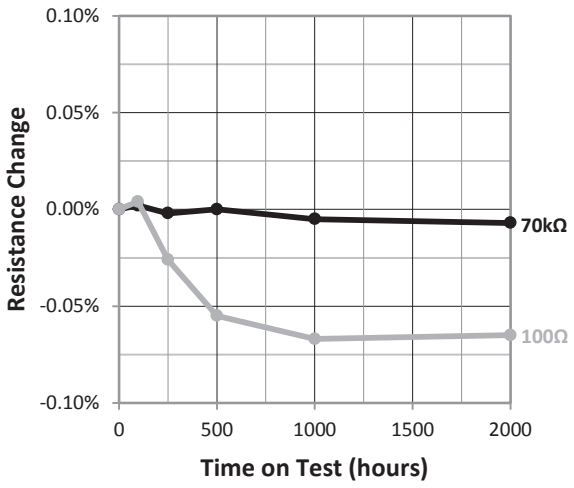
Test	Method	ΔR	
		MIL-PRF-55342 Limits (max)	WIN actual performance (typ)
Thermal Shock	MIL-PRF-55342 4.8.3 (MIL-STD-202 107G cond. F: 5 cycles in air, +150 / -65°C)	± 0.1%	± 0.025%
Low Temp. Operation	MIL-PRF-55342 4.8.5 (-65°C)	± 0.1%	± 0.02%
Short Time Overload	MIL-PRF-55342 4.8.6 (lesser of 6.25 x Pr or 2 x LEV for 5 seconds)	± 0.1%	± 0.02%
High Temp. Exposure	MIL-PRF-55342 4.8.7 (+150°C for 100 hours)	± 0.1%	± 0.05%
Resistance to Solder Heat	MIL-PRF-55342 4.8.8	± 0.2%	± 0.02%
Moisture Resistance	MIL-PRF-55342 4.8.9 (MIL-STD-202 106G: 10 cycles, 65±2°C, 95±5% RH)	± 0.2%	± 0.01%
Load Life	MIL-PRF-55342 4.8.11 (MIL-STD-202 108A: Pr at 70°C for 2000 hours)	± 0.5%	± 0.08%
Biased Damp Heat	85°C, 85%RH, 10% Pr bias, for 2000 hours	N/A	± 0.08%
Flower of Sulfur	ASTM B-809 (modified) 105°C Dry, 1000 Hours	Pass	

Temperature Derating



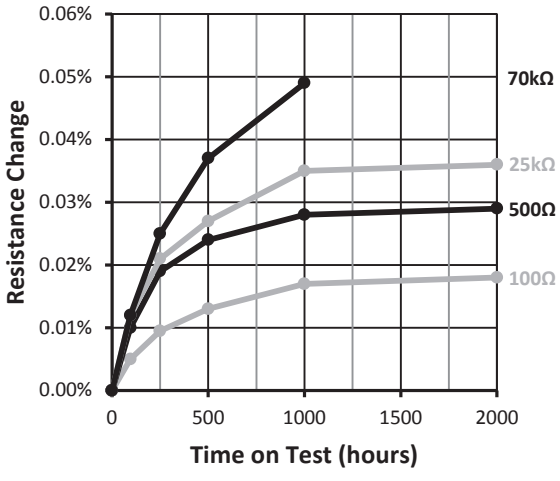
Load Life Stability

Typical Load Life per MIL-STD-202 108A



Biased Damp Heat Stability

Typical @ 85°C, 85%RH, 10% P_r bias



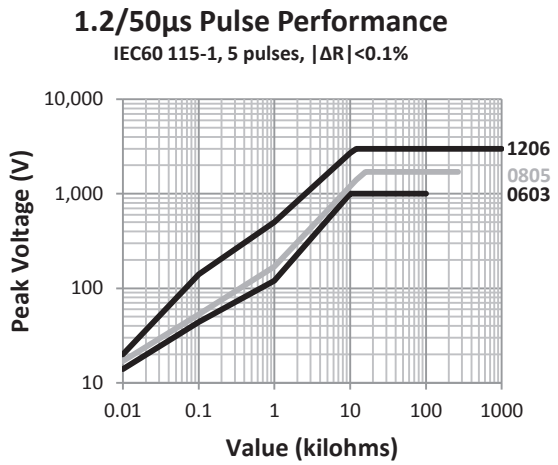
General Note

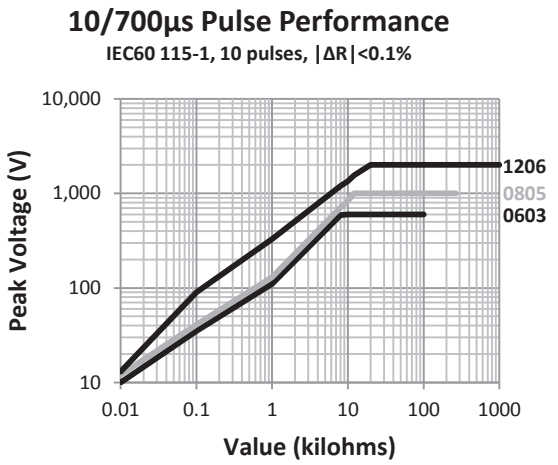
TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Bi technologies IRC Welwyn

www.ttelectronicsresistors.com

© TT Electronics plc





Ordering Procedure

This product has two valid part numbers:

European (Welwyn) Part Number: WINT1206LF031001B (1206, ±25ppm/°C, 1 kilohm ±0.1%, Pb-free)

W	I	N	T	1	2	0	6	L	F	0	3	1	0	0	1	B
1			2					3		4		5				6

1 Series	2 Type	3 Termination	4 TCR	5 Value	6 Tolerance	Packing	
WIN	T0603	LF = Pb free	03 = ±25ppm/°C	3 digits + multiplier R = ohms for values <100 ohms	B = ±0.1%	Tape & reel	
	T0805					All sizes	1000/reel
	T1206						

USA (IRC) Part Number: WIN-T1206LF-03-1001-B (1206, ±25ppm/°C, 1 kilohm ±0.1%, Pb-free)

W	I	N	-	T	1	2	0	6	L	F	-	0	3	-	1	0	0	1	-	B
1				2					3			4			5					6

1 Series	2 Type	3 Termination	4 TCR	5 Value	6 Tolerance	Packing	
WIN	T0603	LF = Pb free	03 = ±25ppm/°C	3 digits + multiplier R = ohms for values <100 ohms	B = ±0.1%	Tape & reel	
	T0805					All sizes	1000/reel
	T1206						

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.

All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Bi technologies IRC Welwyn

www.ttelectronicsresistors.com

© TT Electronics plc