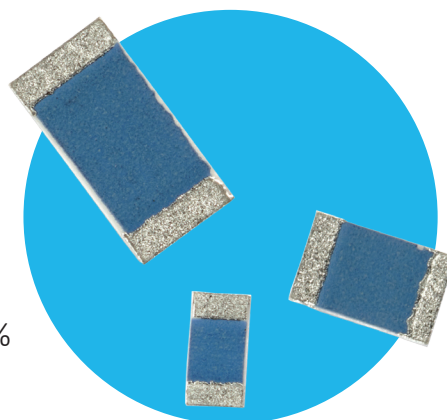


Water Insoluble Nitride Thin Film Precision Chip Resistors

WIN Series

- TaN thin film technology
- 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 ± 100 ppm
- Precision $\pm 0.05\%$ tolerance and ± 15 ppm/°C
- Anti-sulfur terminations



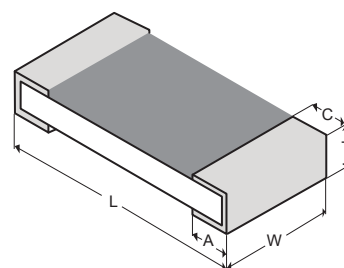
 All Pb-free parts comply with EU Directive 2011/65/EU (RoHS2)

Electrical Data

		T0603	T0805	T1206
Power rating @ 70°C	watts	0.1	0.25	0.33
Resistance range	ohms	5R to 100K	5R to 267K	5R to 1M0
Limiting element voltage (maximum voltage)	Vdc or rms	75	100	200
Resistance tolerance	%	± 0.05 ± 0.1 ± 0.5 ± 1		
TCR	ppm/°C	± 15 ± 25 ± 50		
Standard values		E24, E96, E192		
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 $\pm$ 0.15 (0.062 $\pm$ 0.006)	0.80 $\pm$ 0.10 (0.031 $\pm$ 0.004)	0.45 $\pm$ 0.10 (0.018 $\pm$ 0.004)	0.27 $\pm$ 0.20 (0.011 $\pm$ 0.008)	0.34 $\pm$ 0.20 (0.013 $\pm$ 0.008)	2.0
T0805	2.02 $\pm$ 0.15 (0.080 $\pm$ 0.006)	1.28 $\pm$ 0.15 (0.050 $\pm$ 0.006)	0.45 $\pm$ 0.10 (0.018 $\pm$ 0.004)	0.31 $\pm$ 0.20 (0.012 $\pm$ 0.008)	0.40 $\pm$ 0.20 (0.016 $\pm$ 0.008)	4.3
T1206	3.15 $\pm$ 0.15 (0.124 $\pm$ 0.006)	1.57 $\pm$ 0.15 (0.062 $\pm$ 0.006)	0.50 $\pm$ 0.15 (0.020 $\pm$ 0.006)	0.45 $\pm$ 0.25 (0.018 $\pm$ 0.010)	0.52 $\pm$ 0.25 (0.020 $\pm$ 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 either 100% matt tin or 60/40 SnPb finish.

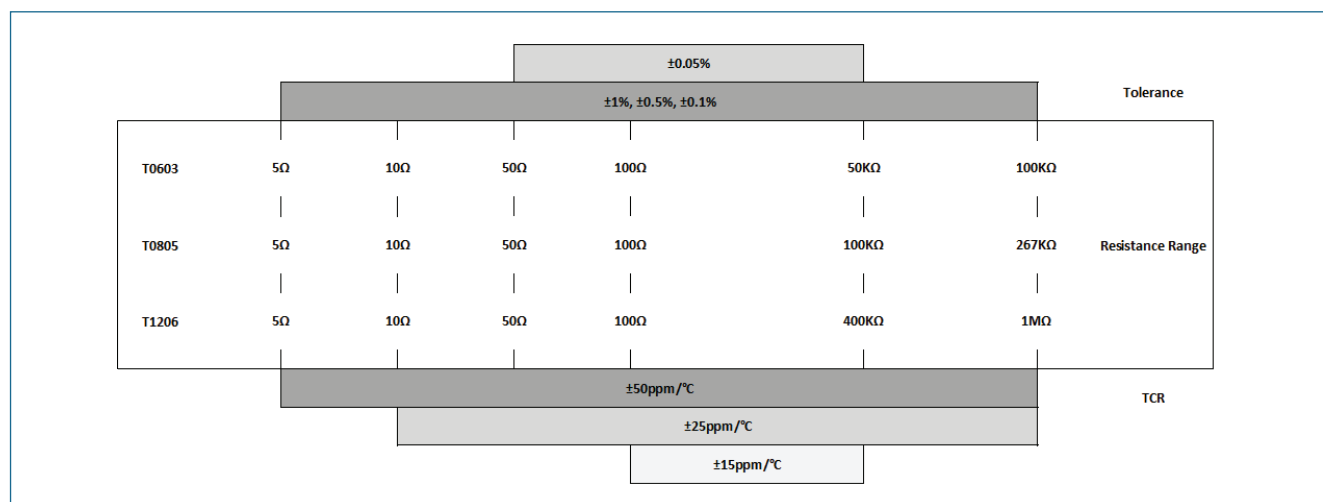
Marking & Solvent Resistance

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

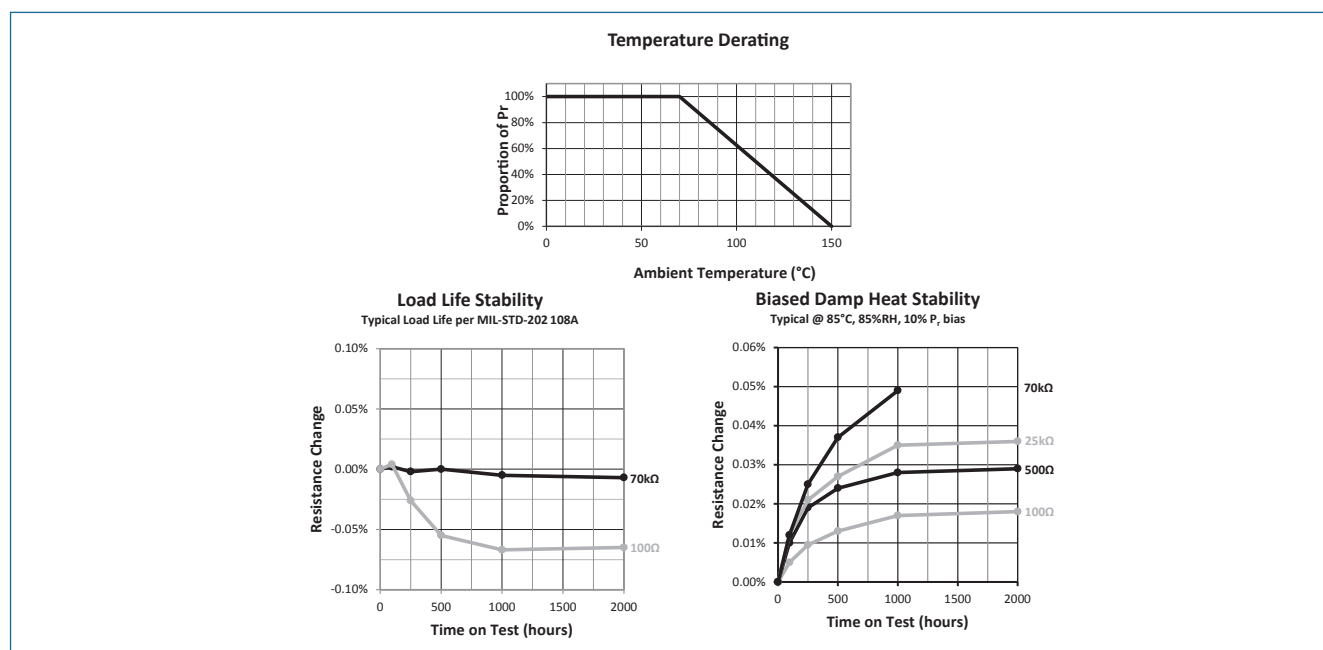
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Manufacturing Capabilities Data



Performance Data

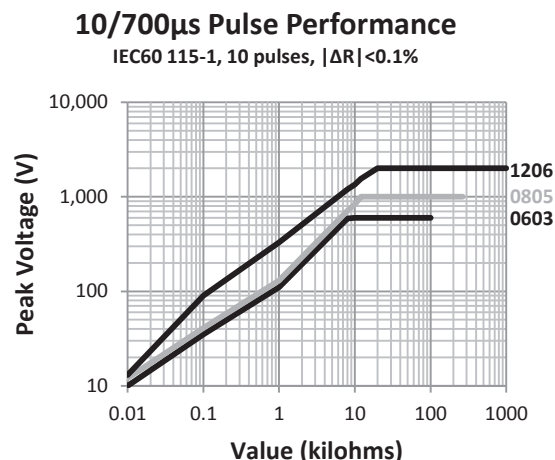
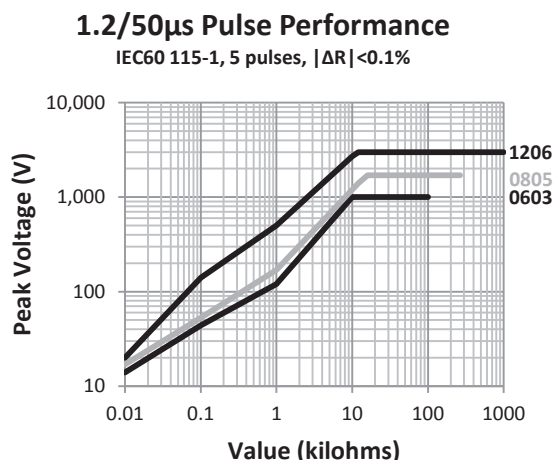
Test	Method	ΔR	
		MIL-PRF-55342 Limits (max)	WIN actual performance (typ)
Thermal Shock	MIL-PRF-55342 4.8.3 (MIL-STD-202 107G cond. F: 5 cycles in air, +150 / -65°C)	± 0.1%	± 0.01%
Thermal Shock - Extended	MIL-STD-202 107G cond. F-3: 100 cycles in air, +150 / -65°C	± 0.1%	± 0.02%
Low Temp. Operation	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%	± 0.02%
High Temp. Exposure Extended	+150°C for 1000 hours	N/A	±0.1%
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	



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WIN Series



Ordering Procedure

This product has two valid part numbers:

European (Welwyn) Part Number: WINT1206LF031001B3 (1206, $\pm 25\text{ppm}/^\circ\text{C}$, 1 kilohm $\pm 0.1\%$, Pb-free)

W	I	N	T	1	2	0	6	L	F	0	3	1	0	0	1	B	3
1		2			3		4		5			6		7			

1	2	3	4	5	6	7
Series	Type	Termination	TCR	Value	Tolerance	Packing
WIN	T0603	PB = SnPb	11 = $\pm 15\text{ppm}/^\circ\text{C}$	3 digits + multiplier	A = $\pm 0.05\%$	Tape & reel
	T0805	LF = Pb free	03 = $\pm 25\text{ppm}/^\circ\text{C}$	R = ohms for	B = $\pm 0.1\%$	3 3000/reel Standard
	T1206		02 = $\pm 50\text{ppm}/^\circ\text{C}$	values < 100 ohms	D = $\pm 0.5\%$	Blank 1000/reel
					F = 1%	

USA (IRC) Part Number: WIN -T1206LF-03-1001-B3 (1206, $\pm 25\text{ppm}/^\circ\text{C}$, 1 kilohm $\pm 0.1\%$, Pb-free)

W	I	N	-	T	1	2	0	6	L	F	-	0	3	-	1	0	0	1	-	B	3
1		2				3		4		5				6		7					

1	2	3	4	5	6	7
Series	Type	Termination	TCR	Value	Tolerance	Packing
WIN	T0603	PB = SnPb	11 = $\pm 15\text{ppm}/^\circ\text{C}$	3 digits + multiplier	A = $\pm 0.05\%$	Tape & reel
	T0805	LF = Pb free	03 = $\pm 25\text{ppm}/^\circ\text{C}$	R = ohms for	B = $\pm 0.1\%$	3 3000/reel Standard
	T1206		02 = $\pm 50\text{ppm}/^\circ\text{C}$	values < 100 ohms	D = $\pm 0.5\%$	Blank 1000/reel
					F = 1%	

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