


Water Insoluble Nitride Thin Film Precision Chip Resistors

Provisional



WIN Series

- Inherent moisture protection superior to that of passivated nichrome chip resistors
- High stability in humid and polluted environments
- Typical moisture resistance and life stability ± 250 ppm
- Precision $\pm 0.1\%$ tolerance and ± 25 ppm/ $^{\circ}\text{C}$ TCR
- **Anti-sulfur terminations**

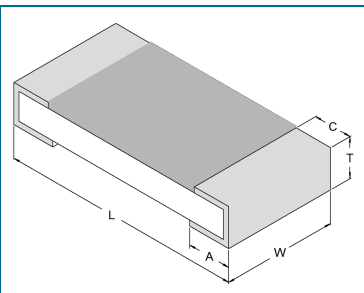
 All parts are Pb-free and comply with EU Directive 2011/65/EU RoHS 2.0

Electrical Data

		T0603	T0805	T1206
Power rating @ 70°C	watts	0.1	0.125	0.25
Resistance range	ohms	10R to 100K	10R to 267K	10R to 1M0
Limiting element voltage (Max. voltage)	Vdc or rms	75	100	200
Resistance tolerance	%	± 0.1		
TCR	ppm/ $^{\circ}\text{C}$	± 25		
Standard values		E24, E96		
Ambient temperature range	$^{\circ}\text{C}$	-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 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

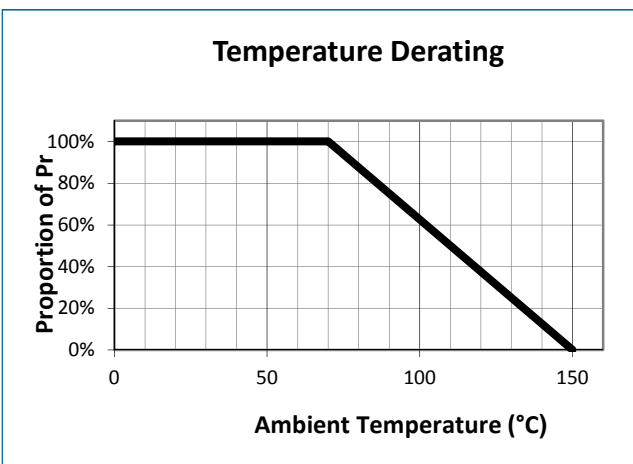
General Note

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.

WIN Series

Performance Data

Test (MIL-STD-202)	Method	WIN Performance	
		Typical ΔR	Maximum ΔR
Thermal Shock	Add descriptions	$\pm 0.025\%$	$\pm 0.1\%$
Low Temperature Operation	Add descriptions	$\pm 0.02\%$	$\pm 0.05\%$
Short Time Overload	Add descriptions	$\pm 0.02\%$	$\pm 0.05\%$
High Temperature Exposure	Add descriptions	$\pm 0.025\%$	$\pm 0.1\%$
Effects of Solder	Add descriptions	$\pm 0.02\%$	$\pm 0.1\%$
Moisture Resistance	Add descriptions	$\pm 0.025\%$	$\pm 0.1\%$
Life	Add descriptions	$\pm 0.025\%$	$\pm 0.1\%$
Flower of Sulfur	ASTM B-809 (modified) 105°C Dry, 1000 Hours	?	?



Pulse performance data

Typical load life stability

(ΔR versus time)

Typical load life & moisture resistance stability

(ΔR versus ohmic value)

General Note

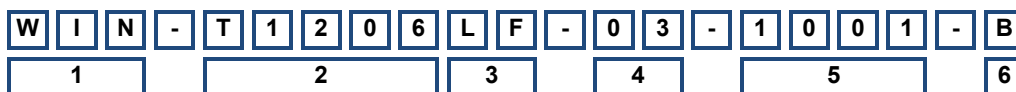
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Packing

WIN resistors are packed.....

Ordering Procedure

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



1	2	3	4	3	4	5
Series	Type	Termination	TCR	Value	Tolerance	Packing
WIN	T0603	LF = Pb free	03 = ±25ppm/°C	3 digits + multiplier R = ohms for values <100 ohms	F = ±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.