

Two-Terminal Surface Mount Resistor

WLTC Series

HF **RoHS** **Pb**


Description

Littelfuse WLTC Series low ohm current sense resistor is designed with long term stability in mind. This series is durable, excels at heat dissipation. The small package is optimal for most applications.

Features

- Low TCR
- Optimal linearity in I / V conversion
- Epoxy substrate

Benefits

- Small size
- High voltage

Application

- Power management
- Low ESL

Additional Information



Resources



Accessories



Samples

Electrical Specifications

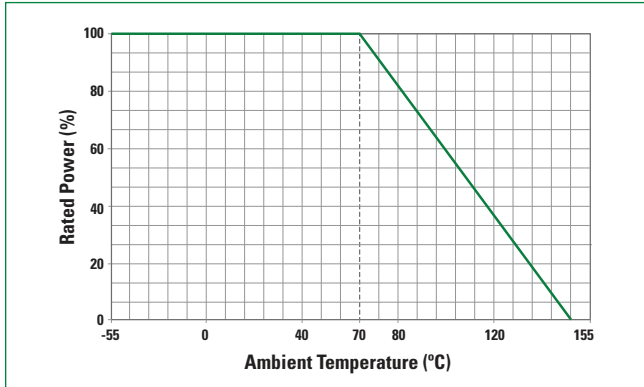
Part Number	Size		Resistance Value		Power Rating (W)	TCR (ppm / °C)	Standard Package Qty
	Inch	mm	Ro (mΩ)	Rt (%)			
WLTC0508RLR002FNR	0508	1220	2	±1.0%	1	±100	5000
WLTC0508QLR003FNR	0508	1220	3	±1.0%	1	±50	5000
WLTC0508QLR004FNR	0508	1220	4	±1.0%	1	±50	5000
WLTC0508QLR005FNR	0508	1220	5	±1.0%	1	±50	5000
WLTC0612QLR001FNR	0612	1632	1	±1.0%	1	±50	5000
WLTC0612QLR002FNR	0612	1632	2	±1.0%	1	±50	5000

Note: Resistors are available in steps of 1mΩ. Ratings not indicated in the above table may be available on request.

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Temperature De-rating Curve



Storage / Environment Conditions

Products should be stored under the following environmental conditions.

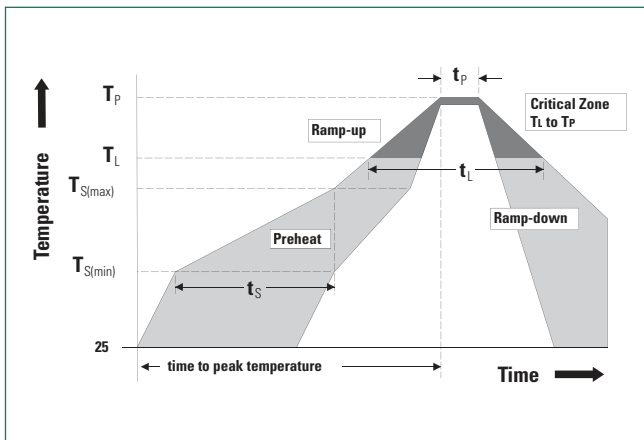
Temperature:	+5 to +35 °C
Humidity:	45 to 85% relative humidity
Moisture Sensitivity Level:	1, J-STD-020

Do not keep products in environments where they may be subject to particulate contamination or harmful gases such as sulfuric acid or hydrogen chloride as it may cause oxidization on electrodes, resulting poor solderability.

Products should be stored in a space that does not expose to high temperatures, vibration, or direct sunlight.

Products should be stored in the original airtight packaging until use.

Soldering Parameters–Wave Soldering



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ($T_{S(max)}$ to T_p)	3 °C / second max
Preheat	
Temperature Minimum ($T_{S(min)}$)	150 °C
Temperature Maximum ($T_{S(max)}$)	200 °C
Time ($T_{S(min)}$ to $T_{S(max)}$)	60–180 seconds
Time maintained above	
Temperature Minimum (T_l)	217 °C
Time (t_l)	60–150 seconds
Peak Temperature (T_p)	260 +0 °C
Time within 5 °C of Actual Peak Temperature (t_p)	20–40 seconds
Ramp-Down Rate	6 °C / second Maximum
Time 25 °C to Peak Temperature	8 minutes Maximum

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Reliability Specifications

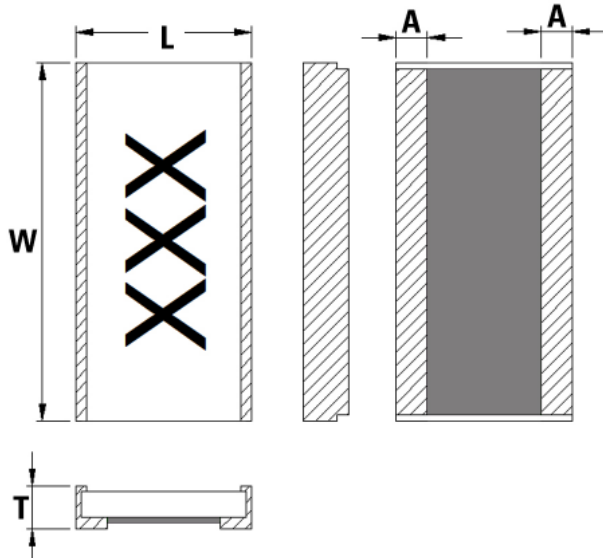
Test	Procedure	Specifications
Resistance Data	Resistance data at 25 °C	Must meet datasheet requirements
TCR Data	TCR data at 25 °C and 125 °C	Must meet datasheet requirements
Dimensional Data	Measure all dimensions specified in datasheet	Must meet datasheet requirements
Short Time Overload IEC60115-1 4.13	Applied voltage: 2.5X rated power. Test period: 5 seconds Test temperature: 25 ± 2 °C	(1.0%+0.5 mΩ)
High Temp. Exposure IEC60115-1 4.25	Test temperature: +155 ± 2 °C Test period: 1,000 hours	±(1.0%+0.5 mΩ)
Low Temp. Storage IEC60115-1 4.25	Test temperature: -55 ± 2 °C Test period: 1,000 hours	±(1.0%+0.5 mΩ)
Moisture Load Life IEC60115-1 4.19	V _{test} = V _{max} Test temperature: 60 ± 2 °C; RH 95% Test period: 1,000 hours as follows 90 minutes ON, 30 minutes OFF	±(2.0%+0.5 mΩ)
Thermal Shock IEC60115-1 4.19	Test period: 100 cycles as follows -55 °C 30 minutes, room temperature 3 minutes, +155 °C 30 minutes, room temperature 3 minutes	±(1.0%+0.5 mΩ)
Load Life IEC60115-1 4.25	V _{test} = V _{max} Test temperature: 70 ± 2 °C Test period: 1,000 hours as follows 90 minutes ON, 30 minutes OFF	±(2.0%+0.5 mΩ)
Solderability IEC60115-1 4.17	Dipped into solder: Test temperature: 245 ± 5 °C Test period: 3 ± 0.5 seconds	The covered area >95%
Resistance to Solder Heat IEC60115-1 4.18	Through reflow, Parts are subjected to 3 reflow cycles	±(1.0%+0.5mΩ)
Mechanical Shock IEC60115-1 4.21	A = 100G Test period: 6 milliseconds	±(1.0%+0.5mΩ)
Substrate Bending IEC60115-1 4.33	Span between fulcrums: 90 mm Bend Width: 2 mm Test period: 60 seconds Test board: glass-epoxy Thickness: 1.60 mm	±(1.0%+0.5mΩ)

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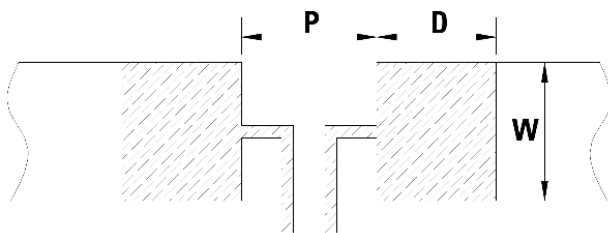
Dimensions

All dimensions in mm



Part Number	W	L	T	A
WLTC0508 R001	2.00±0.25	1.25±0.25	0.40±0.15	0.38±0.20
WLTC0508 1M50~R005	2.00±0.25	1.25±0.25	0.40±0.15	0.32±0.20
WLTC0612 R001	3.20±0.25	1.60±0.25	Max 0.45	0.35±0.15
WLTC0612 1M50~R005	3.20±0.25	1.60±0.25	Max 0.40	0.35±0.15

Recommended Land Pattern



Part Number	P	W	D	Loading
WLTC0508 R001	0.40 mm	2.30 mm	0.90 mm	1.0 w
WLTC0508 1M50~R005	0.50 mm	2.30 mm	0.85 mm	1.0 w
WLTC0612 R001~R005	0.60 mm	3.68 mm	1.30 mm	1.0 w

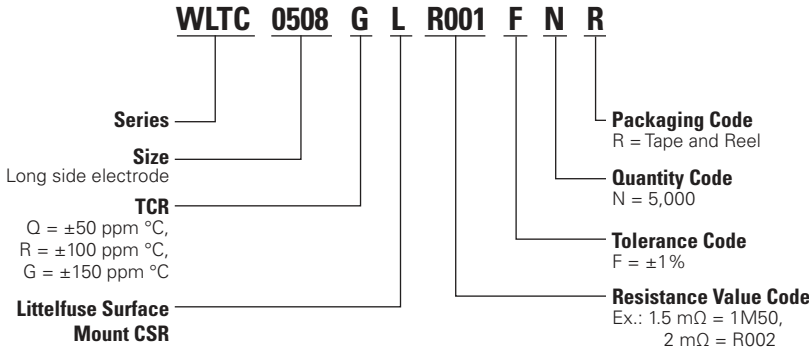
Packaging

Part Number	Halogen Free	Packaging Option	Quantity	Quantity & Packaging Codes
WLTC0508	Yes	Tape and Reel	5000	NR
WLTC0612	Yes	Tape and Reel	5000	NR

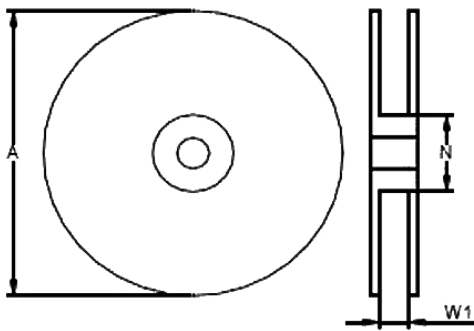
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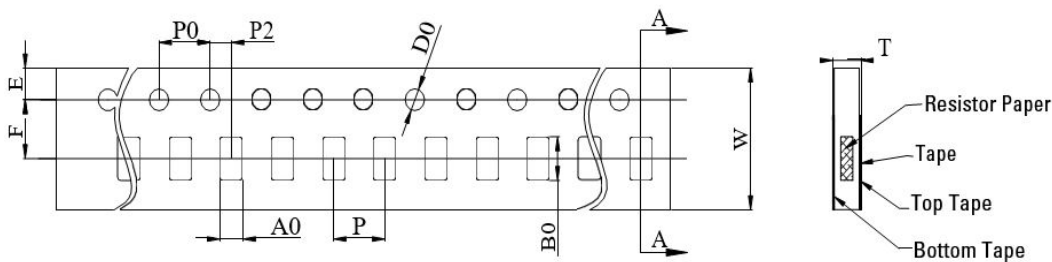
Part Numbering System



Tape and Reel Specifications



Part Number	A±5 (mm)	N±2 (mm)	W1±1 (mm)
WLTC0508	178	60	9.0
WLTC0612	178	60	9.0



Part Number	W	P0	P	P2	A0	B0	D0	F	E	T	T1	K0
WLTC0508	8.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	1.45±0.10	2.20±0.10	1.50±0.10	3.50±0.10	1.75±0.10	0.60±0.10	/	/
WLTC0612	8.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	1.90±0.20	3.50±0.20	1.50±0.10	3.50±0.10	1.75±0.10	0.60±0.10	/	/

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