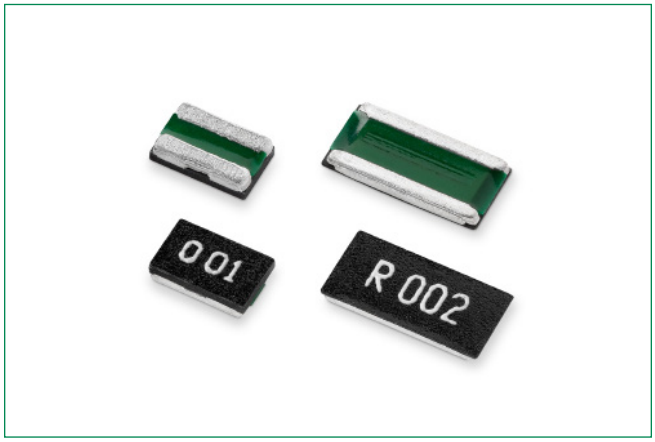
Two-Terminal Surface Mount Resistor

WLTC Series

HF RoHS



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 & Benefits

- Low TCR
- Optimal linearity in I / V conversion
- Epoxy substrate
- 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 1mOhm. Ratings not indicated in the above table may be available on request.

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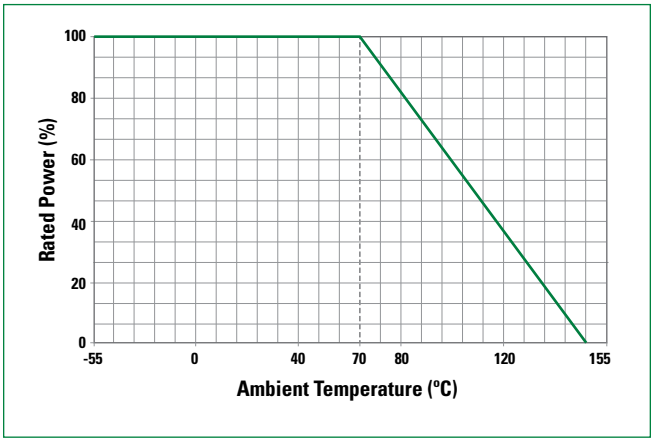
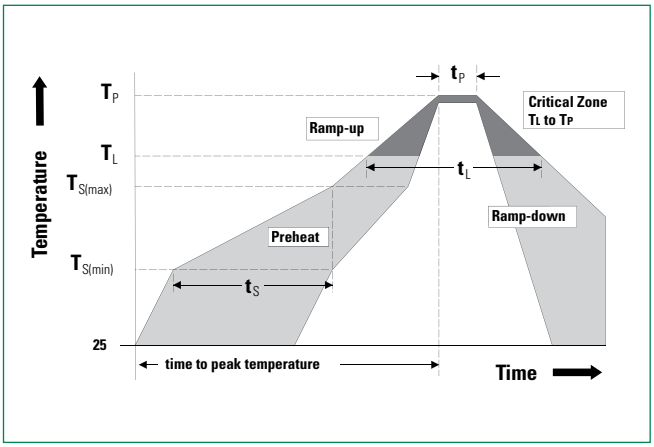
Temperature De-rating Curve



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 (Ts_{max} to Tp)	3 °C / second max
Preheat Temperature Minimum (Ts_{min})	150 °C
Temperature Maximum (Ts_{max})	200 °C
Time (Ts_{min} to (Ts_{max})	60–180 seconds
Time maintained above Temperature Minimum (T_L) Time (t_L)	217 °C 60–150 seconds
Peak Temperature (T_P)	260 +0 °C
Time within 5 °C of Actual Peak Temperature (tp)	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
Short Term Overload	2.5 times the rated voltage shall be applied for 5 sec.	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Load Life (Operational Life)	At temperature 70°C, rated power shall be repeatedly applied for 1.5hrs followed by a pause of 30 min. 1,000 Hours	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Low Temp. Exposure	Test Temp -55°C Test Period: 1,000 hours No Electrical Load	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Temp. Cycling (Thermal Shock)	Repeat 100 cycles as follows: -55°C for 30 minutes 155°C for 30 minutes Transition time of 1 minute max	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
High Temp. Exposure	Test Temp 155°C Test Period: 1,000 hours No Electrical Load	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Moisture Load Life	At temperature 60°C / 95% RH, rated power shall be repeatedly applied for 1.5hrs followed by a pause of 30 min.1,000 Hours	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Resistance to soldering heat	Reflow soldering as per JEDEC-J-STD-020. Repeat for a total of 3 cycles.	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Board Flex	90 mm span between fulcrums 2 mm bend 60 seconds minimum holding time	±1.0% Appearance: Without distinct damage, and the marking shall be legible.
Solderability	Non-activated flux dip: 5-10 seconds SAC solder dip: 3 seconds at 245°C	A new solder shall cover minimum of 95%

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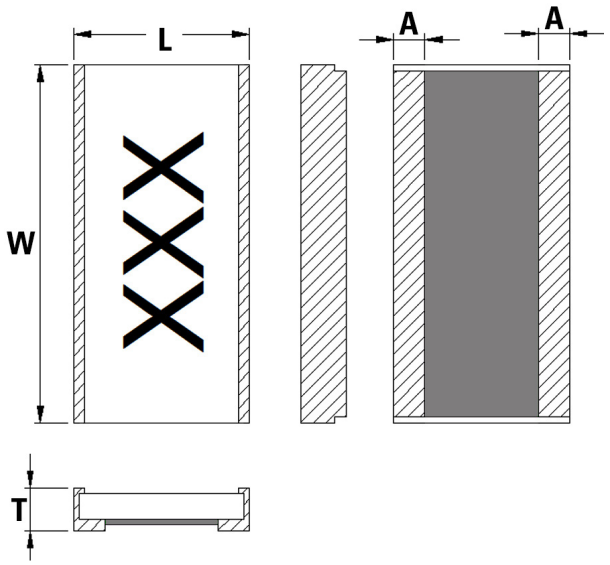
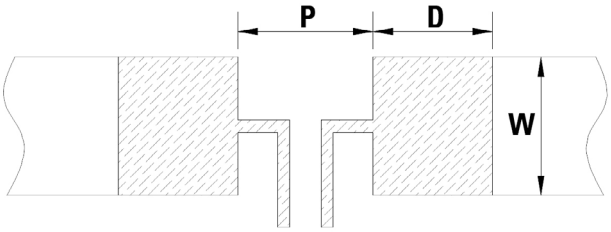
Dimensions

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 Réel	5000	NR

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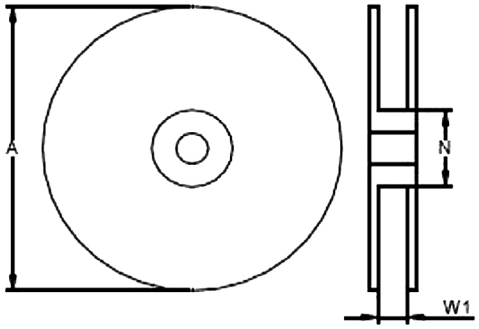
Part Numbering System

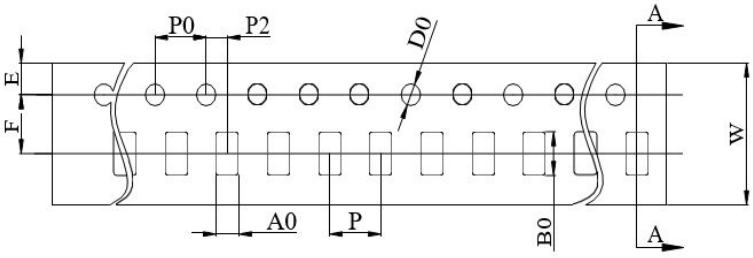
WLTC 0508 G L R001 F N R

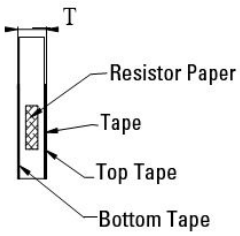
- **Series**
- **Size**
  Long side electrode
- **TCR**
  Q = ±50 ppm °C,
  R = ±100 ppm °C,
  G = ±150 ppm °C
- **Littelfuse Surface Mount CSR**
- **Resistance Value Code**
  Ex.: 1.5 mΩ = 1M50,
  2 mΩ = R002
- **Tolerance Code**
  F = ±1%
- **Quantity Code**
  N = 5,000
- **Packaging Code**
  R = Tape and Reel

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±.010	/	/

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