

## LRMAP2817

### Features

- Resistance range 1mΩ to 100mΩ
- 5W rating in compact footprint
- Current sensing for power electronics

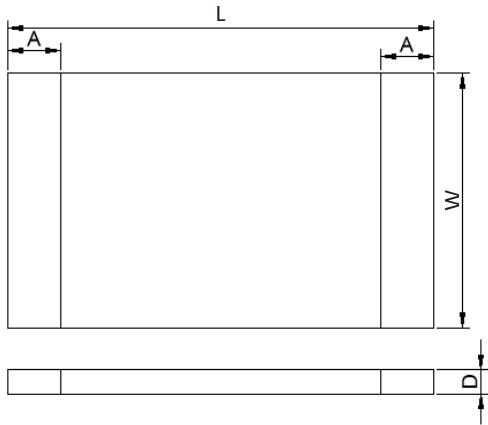
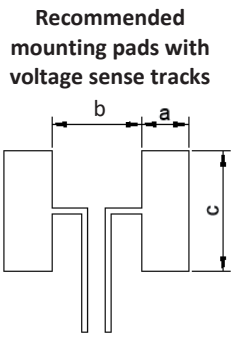


 All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

### Electrical Data

LRMAP2817			
Alloy Type	A	B	
Resistance Value Range	mΩ	1 – 4.7	5 – 100
Preferred values	E24 plus integer milliohm values below 10mΩ and integer multiples of 10mΩ		
Power rating @ 70°C	W	5	
Overload rating (5s)	W	12.5	
Resistance tolerance	%	±0.5, ±1, ±5	
Ambient Temp Range	°C	-65 to +170	
TCR	ppm/°C	±75	±50

### Physical Data

Dimensions in mm and weight in mg										
Type	L	W	A	D	a	b	c	Wt.		
	±0.2	±0.2	±0.2	±0.1	nom.	nom.	nom.	nom.		
LRMAP2817	7.1	4.3	1.2	0.8	2.7	3.5	5.2	140		

### Marking

The component is laser marked with ohmic value.

### Solvent Resistance

The component is resistant to all normal industrial cleaning solvents suitable for printed circuits.

### Construction

The component is formed from a continuous band of E-beam welded (EBW) precision resistive strip. Different resistance alloys are used based on the resistance value.

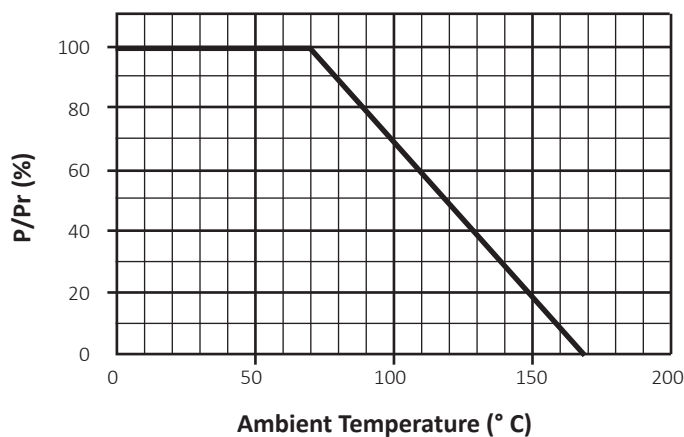
#### General Note

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.

### Performance Data

Test	Methods	Reference	ΔR
Load Life	Cyclic Load, 1000hrs TA=125°C, rated power per Temperature Derating graph below	MIL-STD-202 Method 108	±0.5%
Short Term Overload	2.5 × rated power for 5 s	MIL-STD-202 Method 201	±0.5%
High Temperature Exposure	1000 hours, TA=170°C, unpowered	MIL-STD-202 Method 108	±0.5%
Temperature Cycle	1000 cycles, -55°C to +155°C	JESD22 Method JA-104	±0.5%
Biased Humidity	1000 hours, 85°C/85%RH, 10% of operating power	MIL-STD-202 Method 103	±0.5%
Moisture Resistance	24 hours/cycle, unpowered, steps 7a & 7b not required	MIL-STD-202 Method 106	±0.5%
Mechanical Shock	100g, 6ms, axes Z and Y, 10 shocks per axis	MIL-STD-202 Method 213	±0.5%
Thermal Shock	1000 shocks, -55°C to +150°C	MIL-STD-202 Method107G	±0.5%
Resistance to Solder Heat	260 ± 5°C, 10 ± 1s	MIL-STD-202 Method 210	±0.5%
Solderability	235 ± 5°C, 2 ± 0.5s	J-STD-002	95% min. coverage

**Temperature Derating**  
(0.5% Stability)



### Mounting

The full power rating requires PCB track design which allows for heatsinking of the resistor. Example FR4 board details are as follows: 102x51mm, high Tg FR4 board with 70μm (2 ounce) inner and outer Cu planes or similar substrate, such that terminal temperature is maintained at ≤120°C.

### Processing

LRMAP2817 series resistors are suitable for IR reflow soldering. The recommended reflow profile for Pb-free soldering, for example using SAC387 alloy (Sn 95.5%, Ag 3.8%, Cu 0.7%), is as follows:

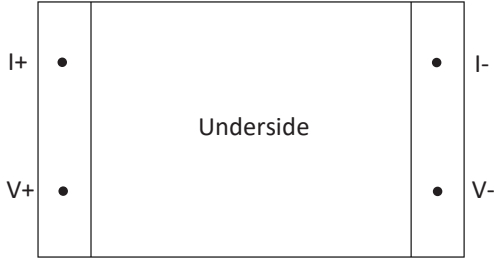
**Pre-heat:** 30s to 45s at 180°C  
**Soldering:** 20s to 40s at 210°C  
**Peak:** 260°C

#### General Note

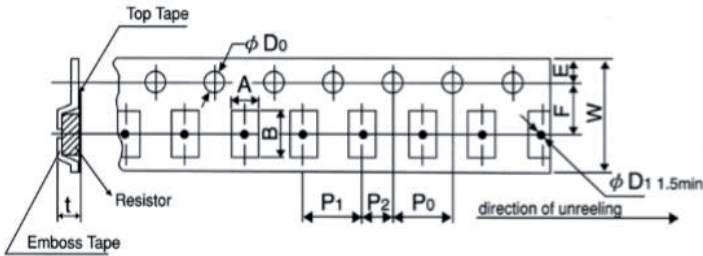
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Measurement

Measurement Current	≥1.5mΩ: 1A <1.5mΩ: 3A	
Probe spacing along component length	5.9mm	
Probe spacing across component width	2.3mm	
Probe tip diameter	≤0.5mm	

Packaging

											
All dimensions in mm											
Size	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	t	Reel dia.
2817	4.8	7.2	16	7.5	1.75	6	2.0	4.0	ø1.5	1.2	330

Ordering Procedure

Example: LRMAP2817B-R005FT (5 milliohms ±1%, Pb-free)

L	R	M	A	P	2	8	1	7	B	-	R	0	0	5		F	T
1									2	3					4	5	

1 Type	2 Alloy	3 Value	4 Tolerance	5 Packing
LRMAP2817	A	3 to 5 characters	D = ±0.5%	T = Plastic tape 1500/reel
	B	R = ohms	F = ±1%	
			J = ±5%	