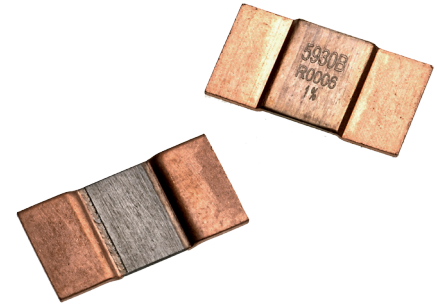


## Low Resistance Metal Alloy Power Resistors

### LRMAP5930

- Resistance range 0.1mΩ to 2mΩ
- Excellent long term stability
- High power rating up to 15W
- Current sensing for power electronics
- AEC-Q200 qualified



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

### Electrical Data

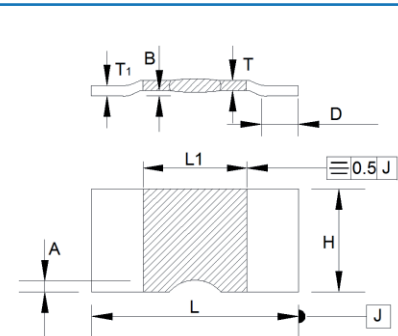
		LRMAP5930							
Alloy type		A		B			D	C	
Resistance value	mΩ	0.1	0.2	0.3	0.5	0.6	0.5	1	2
Power rating, P <sub>r140°C</sub> <sup>1</sup>	W	10	10	7	6	5	7	6	4
Power rating, P <sub>rs70°C</sub> <sup>2</sup>	W	15	15	10	8	8	10	9	7
Overload rating (5s) <sup>1</sup>	W	50	50	35	30	25	35	30	20
Continuous pulse energy	J	15	19	13	7.5	6	19	13	6.5
Internal thermal impedance, R <sub>thi</sub>	°C/W	3	3	4	6	6	4	7	13
Resistance tolerance	%	1							
TCR (20 to 60°C)	ppm/°C	±350	±100		±75			±50	
Thermal EMF	μV/°C	<2							
Inductance	nH	<3							
Ambient temperature	°C	-55 to 170							

Note 1: Mounted on FR4 board. See Thermal Data and Mounting section for details.

Note 2: Mounted on thermal substrate. See Thermal Data and Mounting section for details.

### Physical Data

Type	Dimensions in mm and weight in mg									
	L ±0.3	L1 +0.2 -0.3	H +0.3 -0.2	A max	D +0.1 -1.0	B ±0.1	T1 nom	T nom	Wt. nom	
LRMAP5930A-R0001FT	15.0	5.0	7.75	1.0	4.2	0.5	1.42	1.42	1460	
LRMAP5930B-R0002FT									1440	
LRMAP5930B-R0003FT									960	
LRMAP5930B-R0005FT									570	
LRMAP5930B-R0006FT									470	
LRMAP5930D-R0005FT									1250	
LRMAP5930C-R001FT									880	
LRMAP5930C-R002FT									610	



#### Marking

The component is laser marked with “5930”, alloy type, ohmic value and tolerance.

#### 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. Various alloys are used based on the resistance value.

#### General Note

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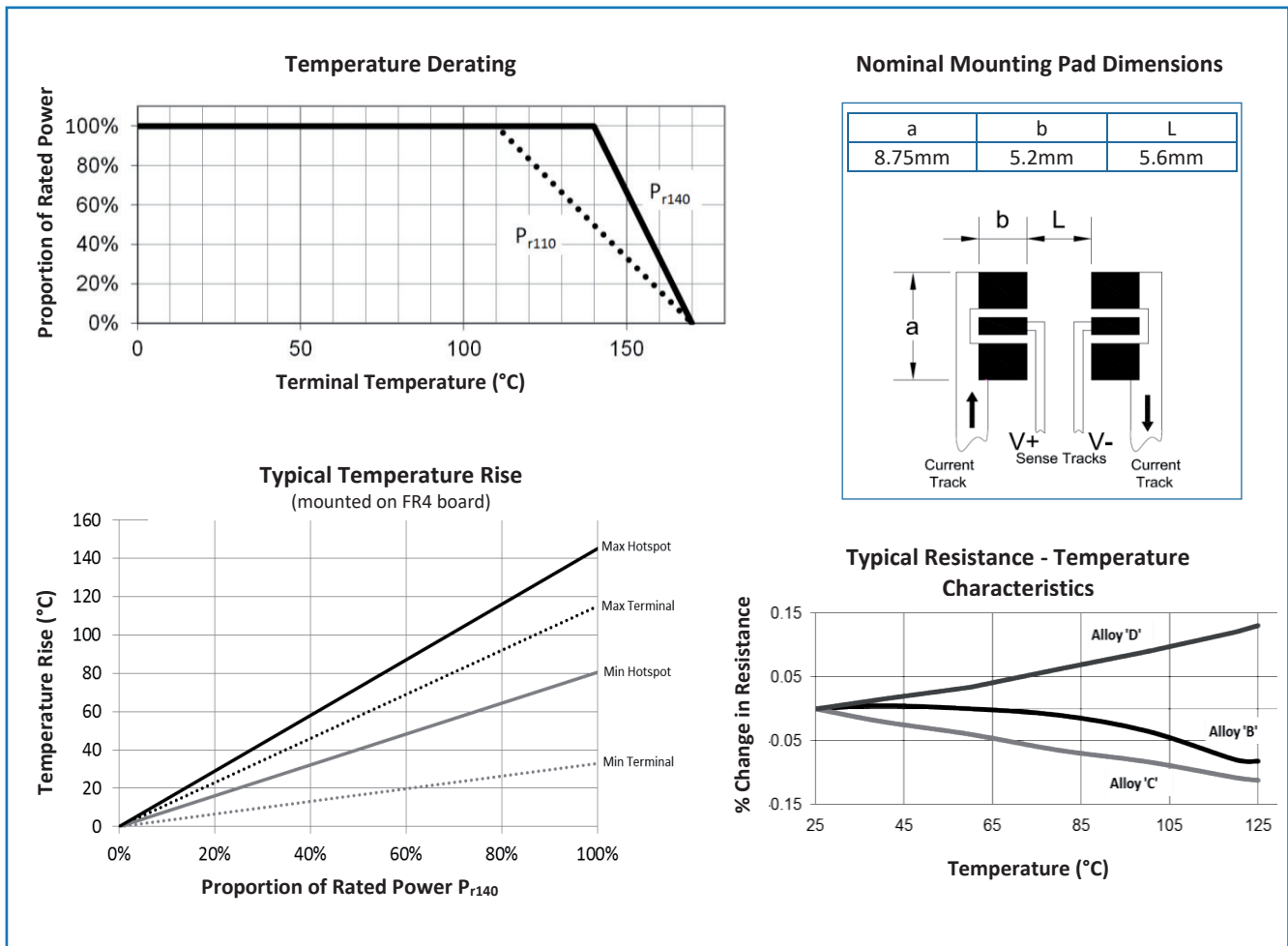
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

## LRMAP5930

### Performance Data

Test	Method	±ΔR%	
		Typical	Maximum
Load Life Stability	2000 hours, rated power, T <sub>terminal</sub> = 110°C	0.3	0.5
	2000 hours, rated power, T <sub>terminal</sub> = 140°C	0.7	1.0
Short Term Overload	5 seconds, 5 x rated power	0.3	1.0
High Temperature Exposure	1000 hours, 125°C	0.4	1.0
Mechanical Shock	MIL-STD-202 Method 213	0.1	0.2
Bias Humidity	1000 hours, 85°C, 85%RH	0.2	0.5
Moisture Resistance	MIL-STD-202 method 106	0.1	0.5
Temperature Cycle	1000 cycles, -55 to +125°C, 15 minute dwell	0.1	0.5
Resistance to Solder Heat	MIL-STD-202 Method 210	0.2	0.5
Vibration	MIL-STD-202 Method 204	0.1	0.2
Low Temperature Storage	1000 hours, -55°C	0.1	0.2
Resistance to Solvents	MIL-STD-202 Method 215	no damage	
Solderability	J-STD-002	>95% coverage	

### Thermal Data & Mounting

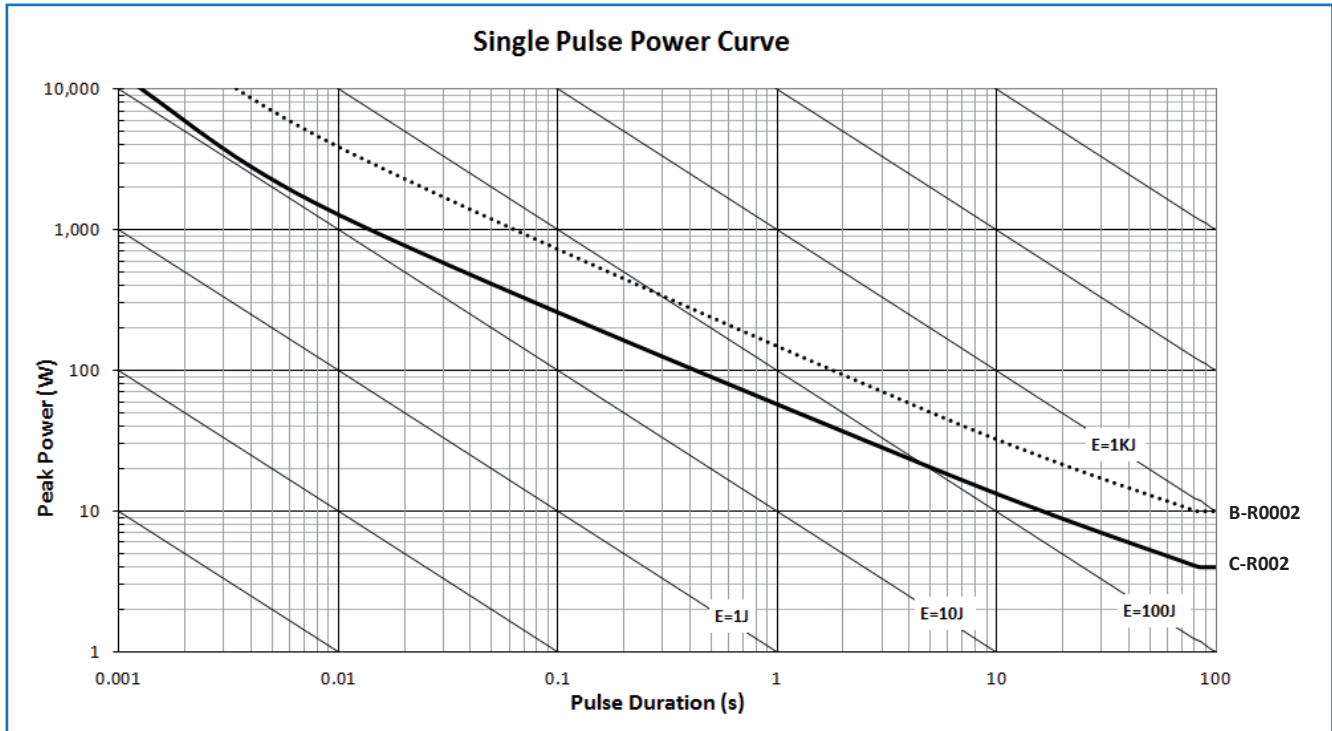


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## LRMAP5930

### Pulse and Overload Performance



### Measurement

Resistance testing for the LRMAP5930 is performed on the underside of the copper contacts using the following method.

Measurement current	2mΩ: 1A 0.2 to 1mΩ: 3A 0.1mΩ: 5A	<p>4-terminal ohm meter</p> <p>Resistor contact probes</p>
Probe spacing along component length	13.2mm	
Probe spacing across component width	3.65mm	
Probe tip diameter	≤0.5mm	

LRMAP5930 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

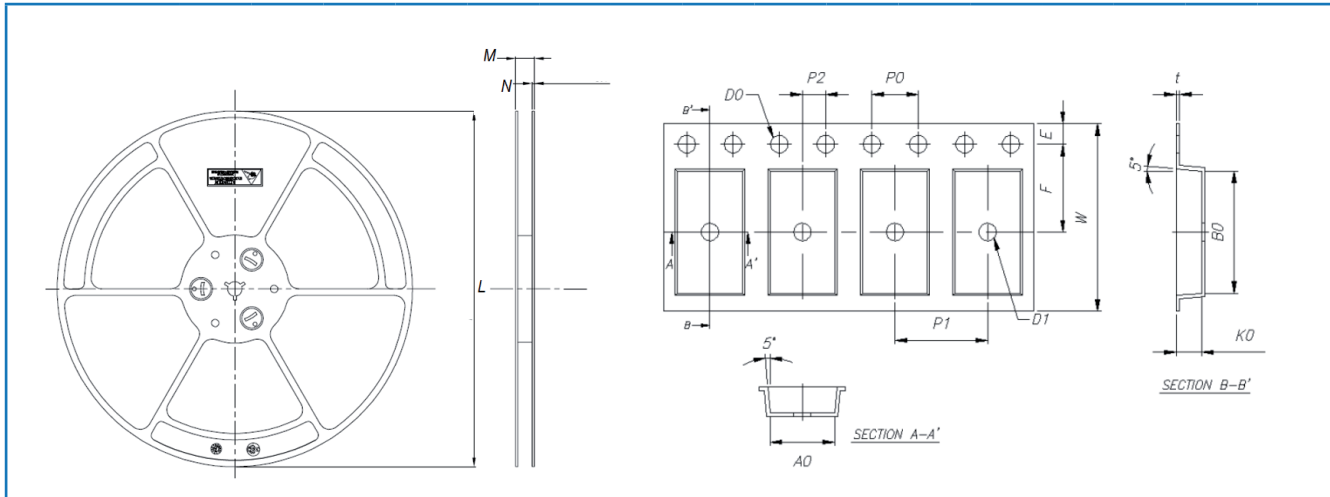
#### General Note

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## LRMAP5930

### Packaging

LRMAP5930 resistors are packed in 24mm tape, 2000 pieces per reel.

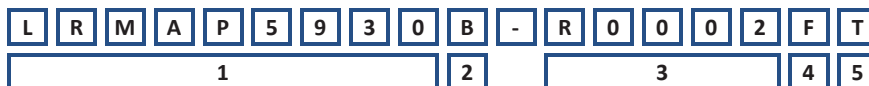


All dimensions in mm

LRMAP5930 Type	L	M	N	W	E	F	D0	D1	P0	P1	P2	P0x10	t	A0	B0	K0
	±1.00	±1.00	+0.30/ -0.10	±0.30	±0.10	+0.10	+0.10/ -0.0	+0.10/ -0.0	±0.10	±0.10	±0.10	±0.20	±0.05	+0.15/ -0.10	±0.12	±0.10
All remaining values	330	29	2.2	24	1.75	11.5	1.50	1.50	4.00	12.0	2.00	40.00	0.30	8.2	15.5	1.40
(B)-R0002, (D)-R0005																2.25

### Ordering Procedure

Example: LRMAP5930B-R0002FT (0.2 milliohms ±1%, Pb-free)



1	2	3	4	5
Type	Alloy	Value	Tolerance	Packing
LRMAP5930	A	4 / 5 characters R = ohms	F = ±1%	T = Plastic tape 2000/reel
	B			
	C			
	D			

#### General Note

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