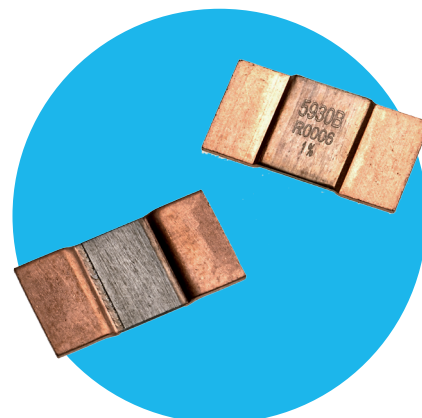


Low Resistance Metal Alloy Power Resistors

LRMAP5930

- Resistance range 0.2mΩ 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		B				D	C	
Resistance value	mΩ	0.2	0.3	0.5	0.6	0.5	1	2
Power rating, P _{r140°C} ¹	W	10	7	6	5	7	6	4
Power rating, P _{rts70°C} ²	W	15	10	8	8	10	9	7
Overload rating (5s) ¹	W	50	35	30	25	35	30	20
Continuous pulse energy	J	19	13	7.5	6	19	13	6.5
Internal thermal impedance, R _{thi}	°C/W	3	4	6	6	4	7	13
Resistance tolerance	%	1						
TCR (20 to 60°C)	ppm/°C	±100			±75			±50
Thermal EMF	μV/°C	<2						
Inductance	nH	<3						
Ambient temperature	°C	-55 to 170						

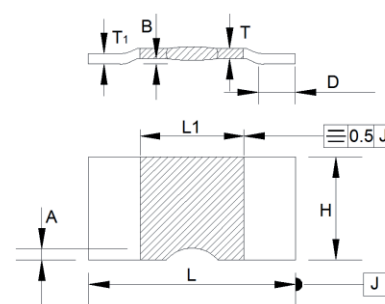
Note 1: Mounted on FR4 board. See Thermal Data and Mounting section for details.

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

Physical Data

Dimensions in mm and weight in mg													
Type	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				
LRMAP5930B-R0002FT	15.0	5.0	7.75	1.0	4.2	0.5	1.42	1.42	1440				
LRMAP5930B-R0003FT							0.94	0.94	960				
LRMAP5930B-R0005FT							0.56	0.56	570				
LRMAP5930B-R0006FT							0.46	0.46	470				
LRMAP5930D-R0005FT		4.4					1.42	1.57	1250				
LRMAP5930C-R001FT		5.0					0.91	0.91	880				
LRMAP5930C-R002FT							0.70	0.44	610				

The technical drawing illustrates the component's geometry. The top view shows a rectangular shape with a central shaded rectangular area. Dimensions labeled include L (total length), L1 (length of the central area), B (width of the central area), and D (width of the outer section). The side view shows the profile with dimensions A (height of the outer section), H (height of the central area), and J (height of the base). Small arrows labeled T and T1 indicate specific features or tolerances on the top surface.



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

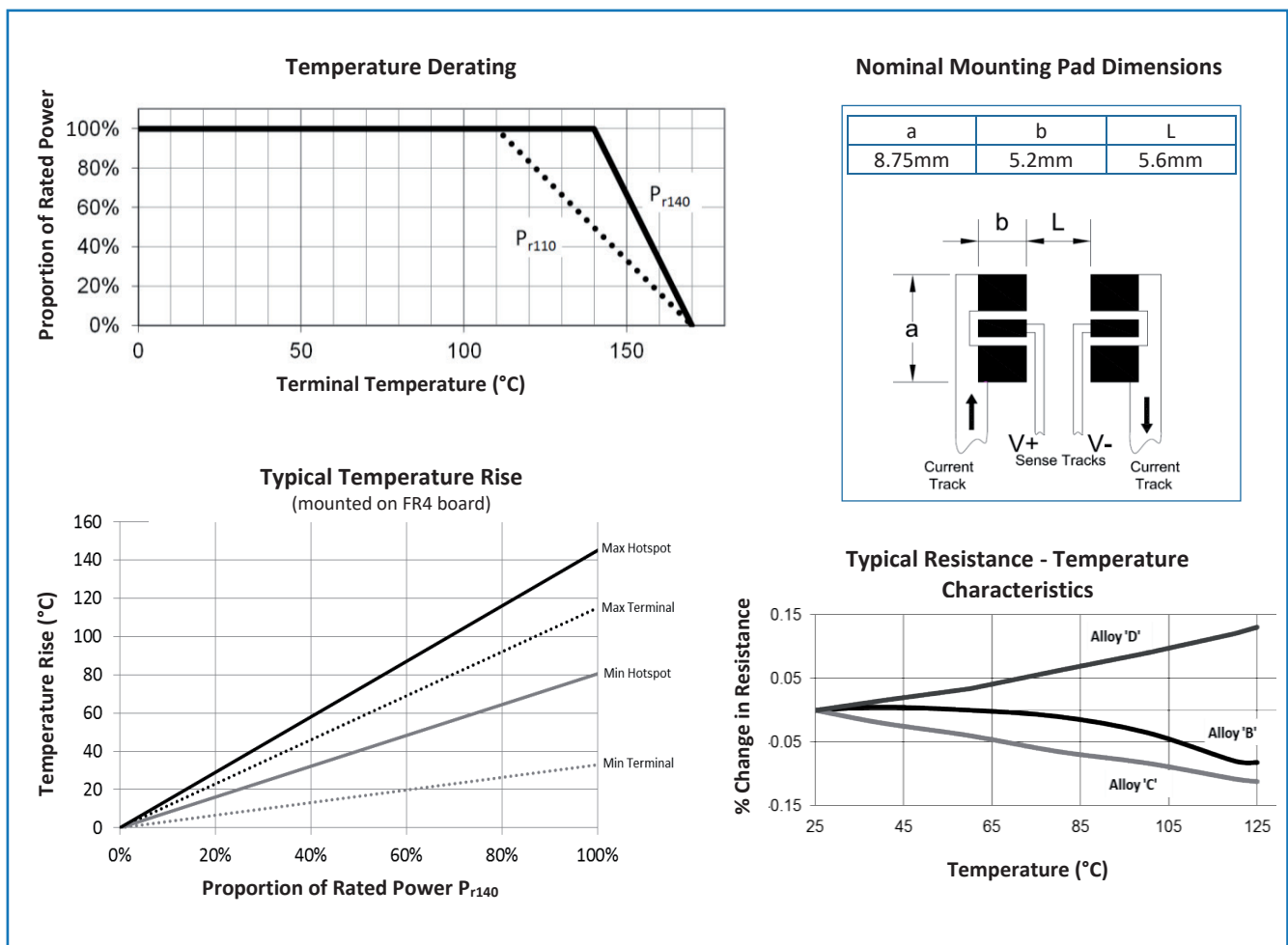
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All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Performance Data

Test	Method	$\pm\Delta R\%$	
		Typical	Maximum
Load Life Stability	2000 hours, rated power, $T_{\text{terminal}} = 110^{\circ}\text{C}$	0.3	0.5
	2000 hours, rated power, $T_{\text{terminal}} = 140^{\circ}\text{C}$	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 $+125^{\circ}\text{C}$, 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	

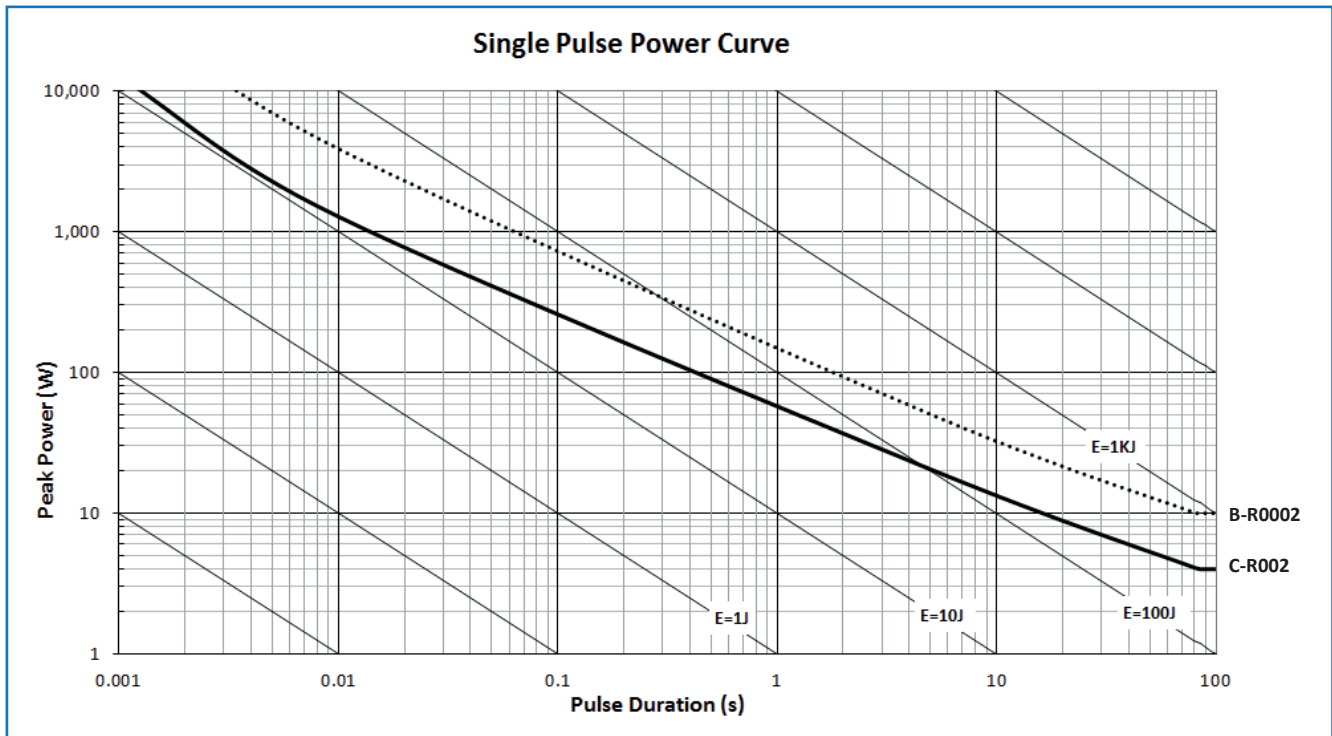
Thermal Data & Mounting



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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	$\geq 1.5\text{m}\Omega$: 1A $< 1.5\text{m}\Omega$: 3A	4-terminal ohm meter Resistor contact probes
Probe spacing along component length	13.2mm	
Probe spacing across component width	3.65mm	
Probe tip diameter	$\leq 0.5\text{mm}$	

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

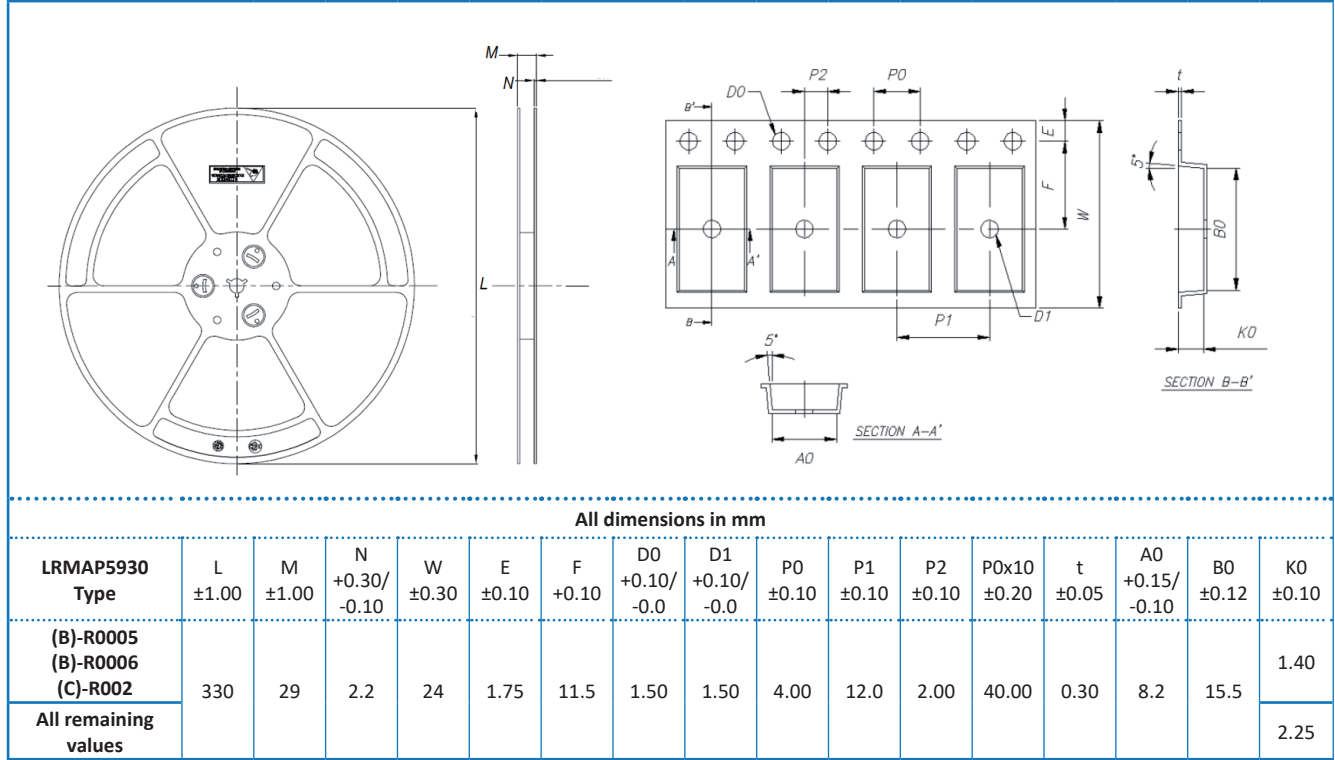
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LRMAP5930

Packaging

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



Ordering Procedure

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

L	R	M	A	P	5	9	3	0	B	-	R	0	0	0	2	F	T
1										2	3					4	5
1	2	3		4		5											
Type	Alloy	Value		Tolerance		Packing											
LRMAP5930	B	4 / 5 characters R = ohms		F = ±1%		T = Plastic tape 2000/reel											
	C																
	D																

General Note

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Mouser Electronics

Authorized Distributor

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[LRMAP5930C-R001FT](#) [LRMAP5930D-R0005FT](#) [LRMAP5930C-R002FT](#) [LRMAP5930B-R0006FT](#) [LRMAP5930B-R0002FT](#) [LRMAP5930B-R0003FT](#) [LRMAP5930B-R0005FT](#)