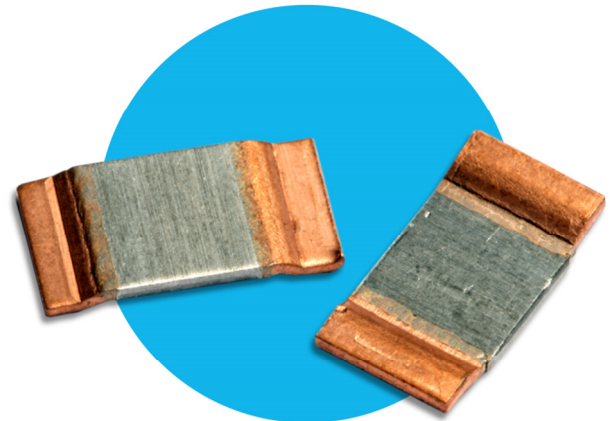



Low Resistance Metal Alloy Power Resistors

LRMAP3920

- Resistance range 0.2mΩ to 2mΩ
- Excellent long-term stability
- High power up to 5W
- Current sensing for power electronics
- AEC-Q200 qualified
- RoHS compliant & halogen free



 All parts are Pb-free and comply with EU Directive 2011/65/EU (RoHS2)

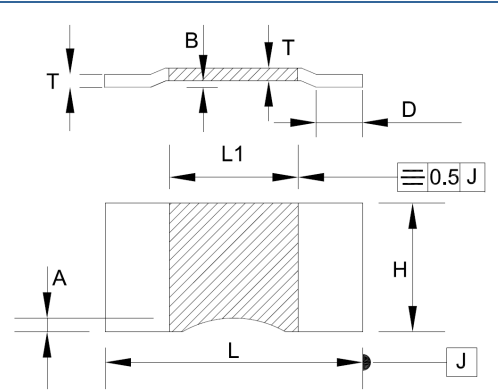
Electrical Data

		LRMAP3920							
Alloy type		A		B			C		
Resistance value	mΩ	0.2	0.3	0.5	0.7	1	1	1.5	2
Power rating, Pr ¹	W	5			4	5	4.5	4	
Overload rating (5s)	W	25			20	25	22.5	20	
Resistance tolerance	%	1, 5							
TCR (20 to 60°C)	ppm/°C	±200	±150	±70	±60	±50			
Thermal EMF	µV/°C	<2							
Ambient temperature	°C	-55 to 170							
Maximum terminal temperature at full power	°C	120							

Note 1: Mounted on a high Tg 4"X2" FR4 test board with 2 ounce inner and outer Cu planes. Terminal temperature maintained at <120°C, air temperature 25°C. See Power Derating Curve and Mounting.

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 ±0.5	B ±0.1	T nom	Wt. nom
LRMAP3920A-R0002	10.0	4.0	5.2	0.6	2.0	0.5	1.50	694
LRMAP3920B-R0003							1.43	608
LRMAP3920B-R0005							0.85	380
LRMAP3920B-R0007		0.62					271	
LRMAP3920B-R001		0.43					188	
LRMAP3920C-R001		1.36					542	
LRMAP3920C-R0015		0.90					361	
LRMAP3920C-R002		0.67					277	



Marking

The component is laser marked with the 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.

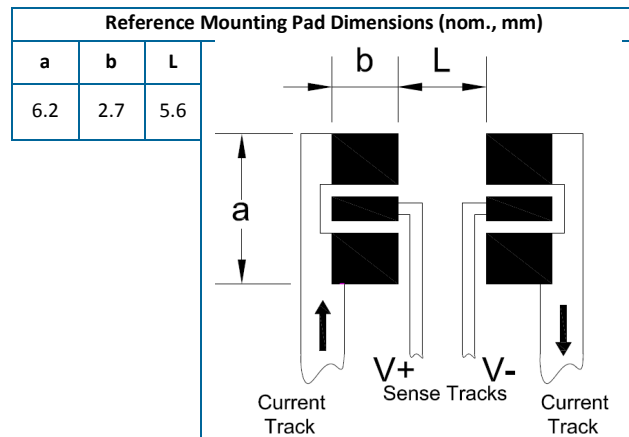
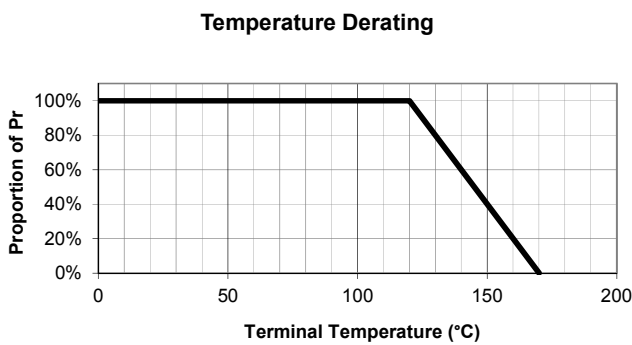
General Note

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	Method	ΔR	
		Typical	Maximum
Load Life	1000 hours, rated power, $T_{\text{terminal}} = 120^{\circ}\text{C}$	±0.5%	±1.0%
Short Term Overload	5 seconds, 5 x rated power	±0.1%	±0.5%
High Temperature Exposure	1000 hours, 170°C	±0.3%	±1.0%
Mechanical Shock	MIL-STD-202 Method 213	±0.1%	±0.5%
Bias Humidity	1000 hours, 85°C, 85%RH	±0.2%	±1.0%
Moisture Resistance	MIL-STD-202 method 106	±0.1%	0.2%
Temperature Cycle	1000 cycles, -55 to +125°C, 15 minute dwell	±0.1%	±0.5%
Resistance to Solder Heat	MIL-STD-202 Method 210	±0.3%	±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	

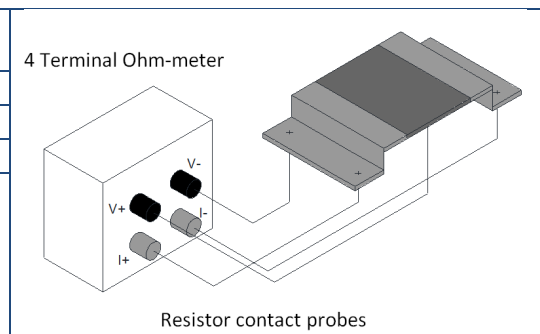
Power Derating Curve & Mounting



Measurement

Resistance testing for the LRMAP3920 is performed on the underside of the copper contacts using the following method.

Measurement current	1A (1.5-2.0mΩ) 3A (0.2-1.49mΩ)
Probe spacing along component length	8.80mm
Probe spacing across component width	2.44mm
Probe tip diameter	≤0.5mm



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.

Low Resistance Metal Alloy Power Resistors

LRMAP3920 Series

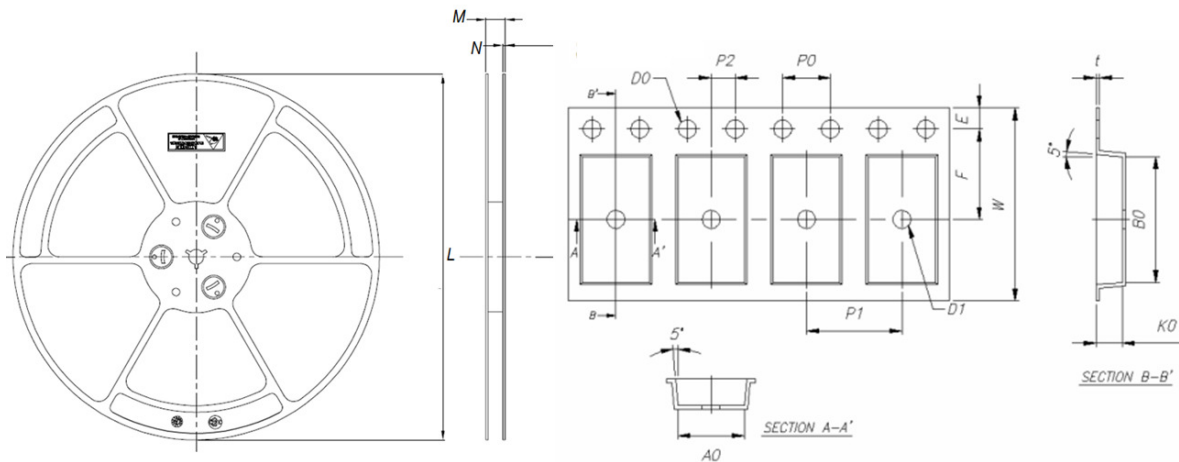
Processing

LRMAP3920 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 250°C
- Peak:** 260°C

Packaging

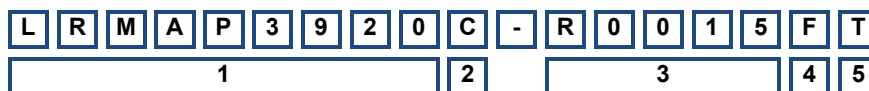
LRMAP3920 resistors are packed in 16mm plastic tape, 3000 pieces per reel.



All Dimensions in mm																
LRMAP3920 Type	L	M	N	W	E	F	D0	D1	P0	P1	P2	P0x10	t	A0	B0	K0
(B)-R001 (B)-R0007 (C)-R002	330	21.4	21.4	16.00	1.75	7.50	1.50	1.50	4.00	8.00	2.00	40.00	0.30	5.55	10.42	1.25
All remaining values																2.20

Ordering Procedure

Example: LRMAP3920C-R0015FT (1.5 milliohms ±1%, Pb-free)



1	2	3	4	5
Type	Alloy	Value	Tolerance	Packing
LRMAP3920	A	4 / 5 characters	F = ±1%	T = Plastic tape 3000/reel
	B	R = ohms	J = ±5%	
	C			

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.