MPL-AL4020-R82



Low-Resistance Molded Inductor 0.82µH

APPLICATIONS



- Battery-powered devices
- Embedded computing
- High-current SMPS
- High-frequency SMPS
- POL converters
- FPGA

FEATURES

- Size 4.1mmx4.1mmx1.9mm
- Low DCR
- Low AC Losses
- Low Audible Noise
- Molded Construction
- Soft Saturation
- Stable Over High Temperatures
- Max Operating Temp +155°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS				
Parameter			Value	Unit
Inductance (1)	L	±20%	0.82	μH
Resistance	R DC	typ	9.0	mΩ
Resistance MAX	RDC MAX	max	9.8	mΩ
Rated Current (2)	I _R	typ	8.4	Α
Saturation Current 25°C (3)	SAT 25°C	typ	9.5	Α
Saturation Current 100°C (4)	SAT 100°C	typ	9.5	Α
Resonance Frequency	fr	typ	68	MHz

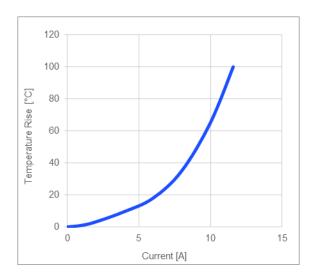
GENERAL SPECIFICATION	IS CONTRACTOR OF THE PROPERTY
(1) Inductance	Measured at 100kHz, 100mA
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, PCB layout, proximity to other components, and trace dimensions and thickness.
(3) Saturation Current 25°C	Saturation current will cause L to drop from 30% at 25°C ambient temperature
(4) Saturation Current 100°C	Saturation current will cause L to drop from 30% at 100°C ambient temperature
Temperature Test Condition	Electrical specifications measured at 25°C, 35% RH if not given differently
Operating Condition	Operating temperature: -40°C to +155°C (including temp rise)
	Should not exceed +155°C under worst-case operation conditions
Storage Condition	Tape and Reel packaging: -10°C to +40°C
	Humidity: <50% RH

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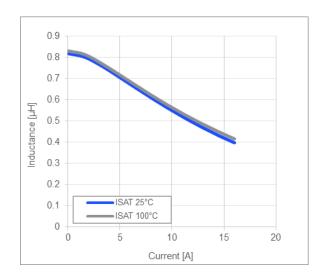


TYPICAL PERFORMANCE CURVES

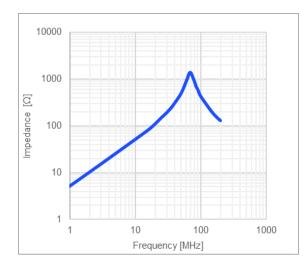
Temperature Rise vs. Current



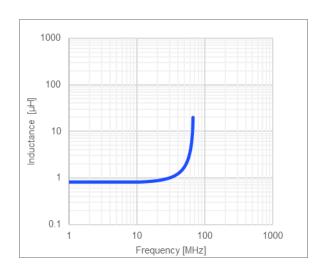
Inductance vs. Current



Impedance vs. Frequency

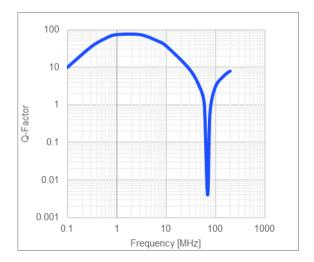


Inductance vs. Frequency

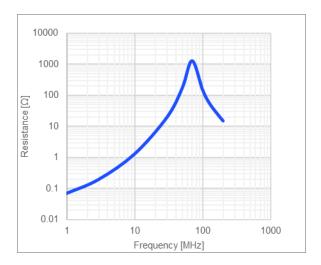




Quality Factor vs. Frequency

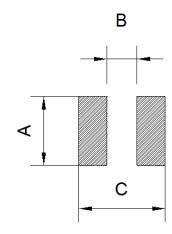


AC Resistance vs. Frequency





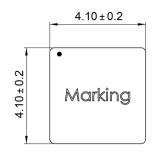
LAND PATTERN			
Dimensions			
Α	3.80 ref.		
В	1.40 ref.		
С	3.40 ref.		
	(unit in mm)		

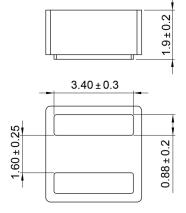


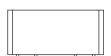
PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)







TOP MARKING

Marki	ng	
Start of Winding	· (dot)	
Inductance Code	R82	
MPS Code	MPS	



ORDERING INFORMAT	ION				
Part Number	L (1)	RDC	I _R ⁽²⁾	ISAT 25°C (3)	ISAT 100°C (4)
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AL4020-R47	0.47	6.2	9.2	12.5	12.5
MPL-AL4020-R68	0.68	7.5	8.7	11	11
MPL-AL4020-R82	0.82	9.0	8.4	9.5	9.5
MPL-AL4020-1R0	1.0	10.1	7.9	8.6	8.6
MPL-AL4020-1R2	1.2	12.2	7.4	7.5	7.5
MPL-AL4020-1R5	1.5	14.5	6.4	7.1	7.1
MPL-AL4020-2R2	2.2	21.5	5.5	6.2	6.2
MPL-AL4020-3R3	3.3	34.5	4.4	5.2	5.2
MPL-AL4020-4R7	4.7	52.2	3.65	4.2	4.2

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Saturation current will cause L to drop from 30% at 25°C ambient temperature		
Saturation current will cause L to drop from 30% at 100°C ambient temperature		
Electrical specifications measured at 25°C, 35% RH if not given differently		
Operating temperature: -40°C to +155°C (including temp rise)		
Should not exceed +155°C under worst-case operation conditions		
Tape and Reel packaging: -10°C to +40°C		
Humidity: <50% RH		

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