MPL-AY1265-4R7

Molded Inductor 4.7µH

APPLICATIONS

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

FEATURES

- Size 13.5mmx12.6mmx6.2mm
- Molded Construction
- Low Audible Noise
- Soft Saturation
- Stable Over High Temperatures
- Max Operating Temp +155°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS

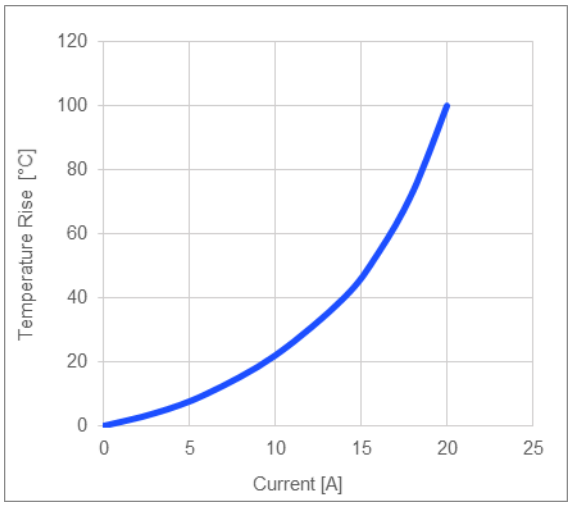
Parameter			Value	Unit
Inductance (1)	L	±20%	4.7	µH
Resistance	R_{DC}	typ	7.0	mΩ
Resistance MAX	$R_{DC\ MAX}$	max	8.1	mΩ
Rated Current (2)	I_R	typ	14	A
Saturation Current 25°C (3)	$I_{SAT\ 25°C}$	typ	23	A
Saturation Current 100°C (4)	$I_{SAT\ 100°C}$	typ	23	A
Resonance Frequency	f_r	typ	13	MHz

GENERAL SPECIFICATIONS

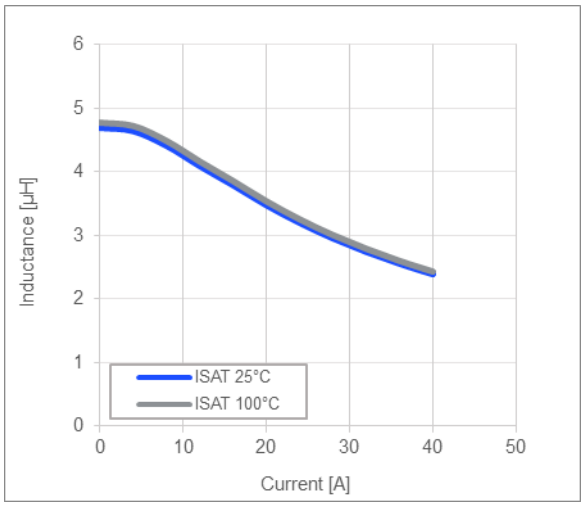
(1) Inductance	Measured at 100kHz, 100mA
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K *I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35µm Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, PCB layout, proximity 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

TYPICAL PERFORMANCE CURVES

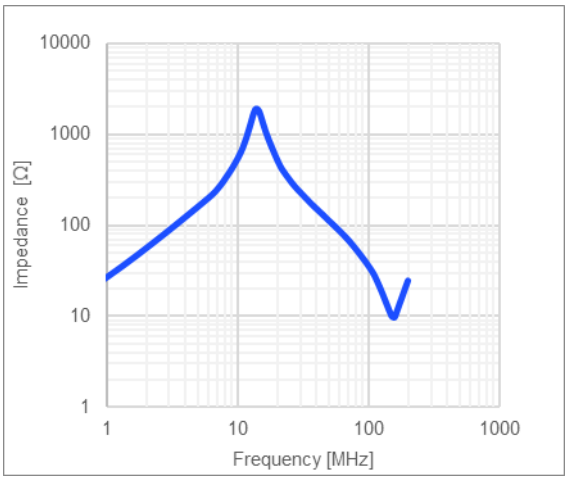
Temperature Rise vs. Current



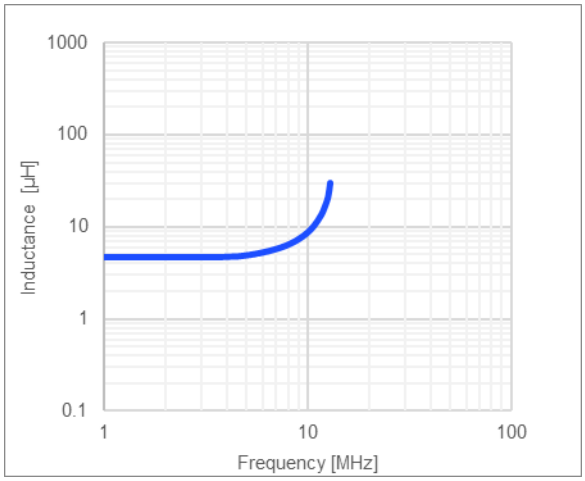
Inductance vs. Current



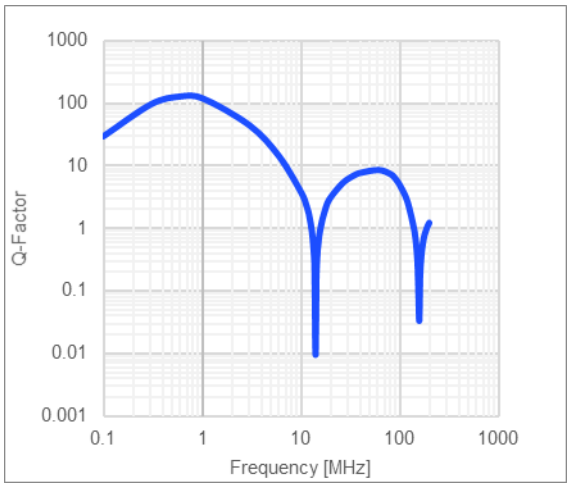
Impedance vs. Frequency



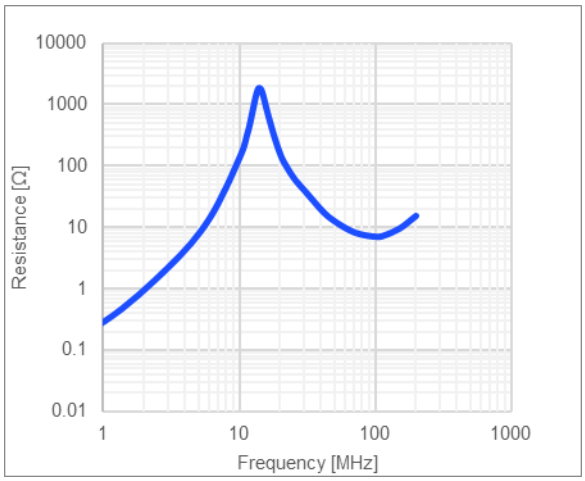
Inductance vs. Frequency



Quality Factor vs. Frequency

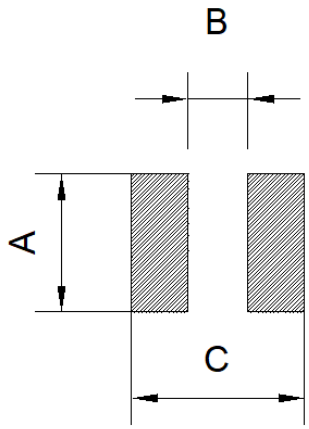


AC Resistance vs. Frequency



LAND PATTERN

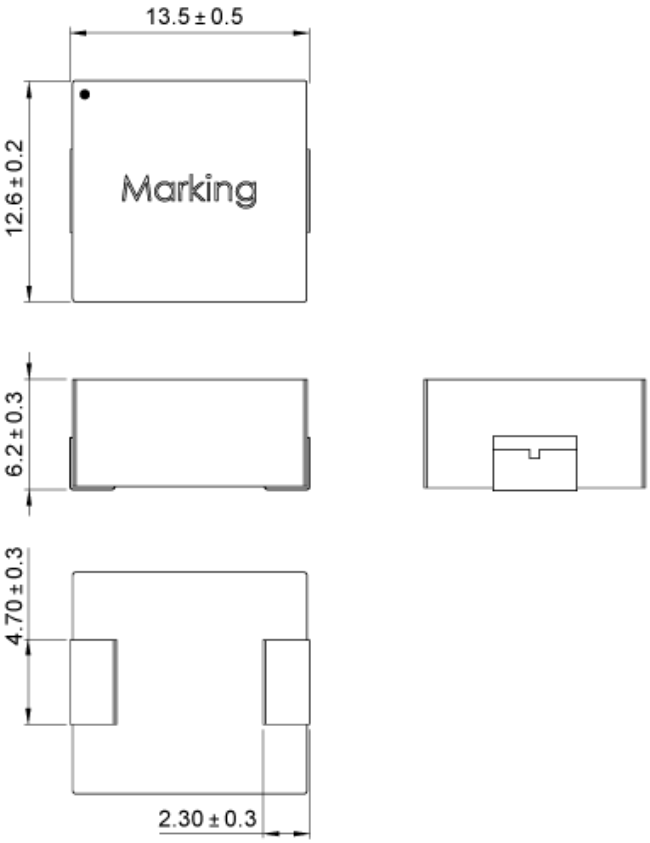
Dimensions	
A	5.0 ref.
B	8.0 ref.
C	14.50 ref.
	(unit in mm)



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



TOP MARKING

Marking	
Start of Winding	· (dot)
Inductance Code	3R3
MPS Code	MPS
Date Code	YYWW

ORDERING INFORMATION

Part Number	L [1] typ (µH)	R_{DC} typ (mΩ)	I_R [2] typ (A)	$I_{SAT\ 25°C}$ [3] typ (A)	$I_{SAT\ 100°C}$ [4] typ (A)
MPL-AY1265-R47	0.47	0.89	33	64	64
MPL-AY1265-R56	0.56	1.1	31	58	58
MPL-AY1265-R68	0.68	1.25	29	51	51
MPL-AY1265-R82	0.82	1.3	27	46	46
MPL-AY1265-1R0	1.0	1.5	25.5	43	43
MPL-AY1265-1R2	1.2	1.8	24	37	37
MPL-AY1265-1R5	1.5	2.3	22	34	34
MPL-AY1265-1R8	1.8	3.3	20	29	29
MPL-AY1265-2R2	2.2	3.7	17	26.5	26.5
MPL-AY1265-3R3	3.3	5.5	16	25	25
MPL-AY1265-4R7	4.7	7.0	14	23	23
MPL-AY1265-5R6	5.6	8.6	13	20	20
MPL-AY1265-6R8	6.8	9.9	12	19.5	19.5
MPL-AY1265-8R2	8.2	12.5	11.5	18	18
MPL-AY1265-100	10	13.3	10.7	16	16
MPL-AY1265-150	15	21.8	8.5	12	12
MPL-AY1265-220	22	31.4	7	9	9

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