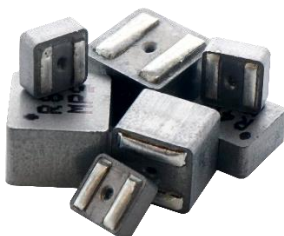


APPLICATIONS



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

FEATURES

- Size 5.5mmx5.3mmx2.9mm
- 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%	2.2	μH
Resistance	R_{DC}	typ	12.3	mΩ
Resistance _{MAX}	$R_{DC\ MAX}$	max	14.6	mΩ
Rated Current ⁽²⁾	I_R	typ	8.2	A
Saturation Current _{25°C} ⁽³⁾	$I_{SAT\ 25°C}$	typ	11	A
Saturation Current _{100°C} ⁽⁴⁾	$I_{SAT\ 100°C}$	typ	11	A
Resonance Frequency	f_r	typ	32	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

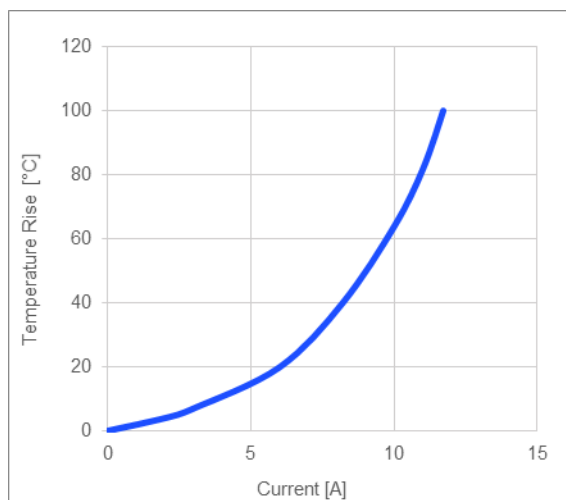
Operating temperature: -40°C to +155°C (including temp rise)
 Should not exceed +155°C under worst-case operation conditions

Storage Condition

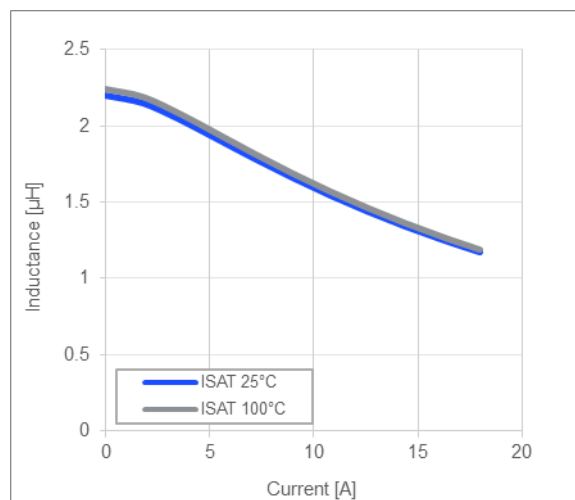
Tape and Reel packaging: -10°C to +40°C
 Humidity: <50% RH

TYPICAL PERFORMANCE CURVES

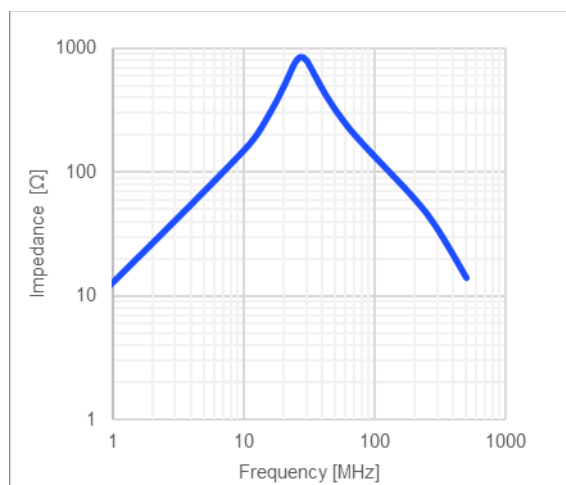
Temperature Rise vs. Current



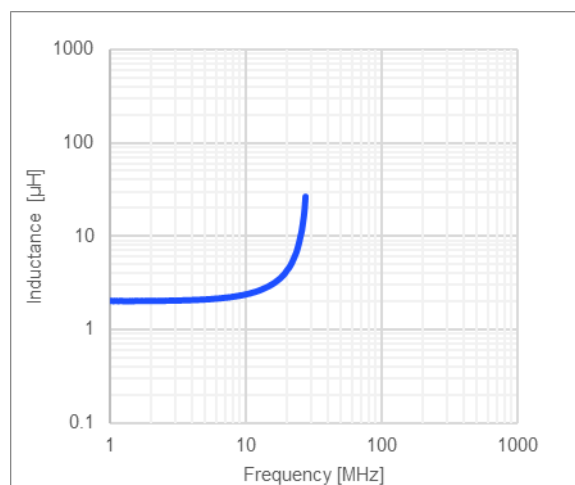
Inductance vs. Current



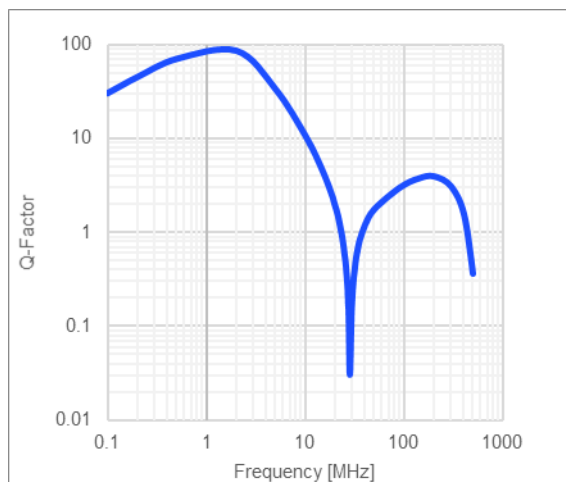
Impedance vs. Frequency



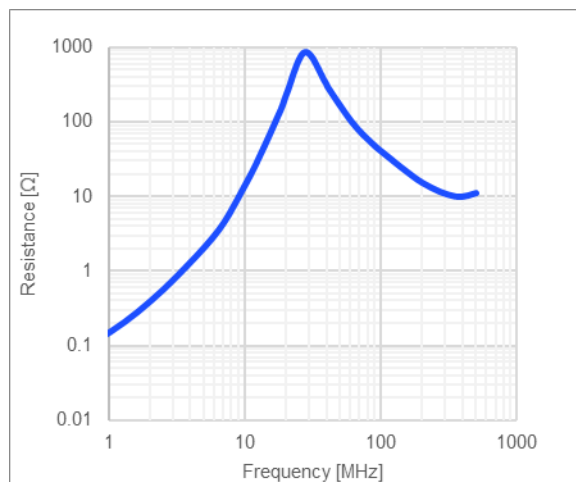
Inductance vs. Frequency



Quality Factor vs. Frequency



AC Resistance vs. Frequency



LAND PATTERN

Dimensions

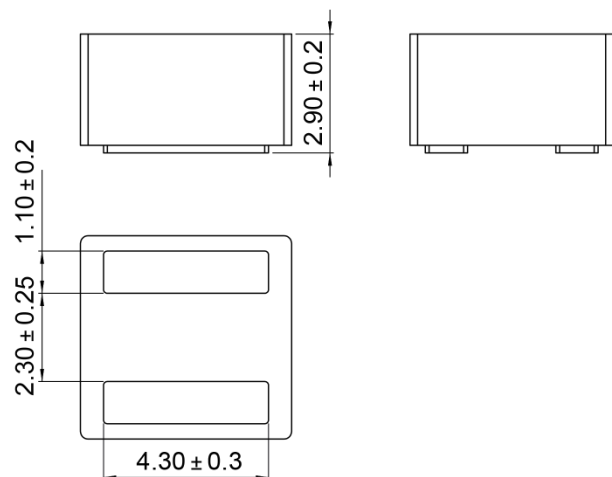
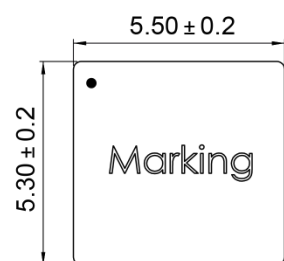
A	4.70 ref.
B	2.0 ref.
C	4.50 ref. (unit in mm)



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



TOP MARKING

Marking

Start of Winding	· (dot)
Inductance Code	2R2
MPS Code	MPS

ORDERING INFORMATION

Part Number	$L^{(1)}$	R_{DC}	$I_R^{(2)}$	$I_{SAT\ 25^\circ C}^{(3)}$	$I_{SAT\ 100^\circ C}^{(4)}$
	typ (μH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AL5030-R47	0.47	3.78	13.6	26.5	26.5
MPL-AL5030-R56	0.56	3.92	13.2	22	22
MPL-AL5030-R82	0.82	5.0	12.8	18	18
MPL-AL5030-1R0	1.0	6.5	11.2	16	16
MPL-AL5030-1R2	1.2	8.0	10.0	14	14
MPL-AL5030-1R5	1.5	9.7	9.0	12.5	12.5
MPL-AL5030-1R8	1.8	10.5	8.8	12	12
MPL-AL5030-2R2	2.2	12.3	8.2	11	11
MPL-AL5030-3R3	3.3	21	6.0	10	10
MPL-AL5030-4R7	4.7	33	5.3	8	8

GENERAL SPECIFICATIONS

(1) Inductance	Measured at 100kHz, 100mA
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K <i>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.</i>
(3) Saturation Current $_{25^\circ C}$	Saturation current will cause L to drop from 30% at 25°C ambient temperature
(4) Saturation Current $_{100^\circ C}$	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

NOTICE: The information in this document is subject to change without notice. Please contact MPS for current specifications. Users should warrant and guarantee that third-party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Monolithic Power Systems \(MPS\):](#)

[MPL-AL5030-2R2](#)