SYNYON

Document No. SYN-DS-SYP3520
Revision V2.0 | 2026-11-02

Molded Power Inductor

SYP3520 Series

Performance Series · 3.5×3.2×2.0 mm



RoHS Compliant · Halogen-Free

Features

Lowest DCR with very low AC loss
Excellent current handling with soft saturation

Core material:	Composite magnetic powder
Environmental:	RoHS compliant, halogen-free
Terminal plating:	Ni-Sn (SN); SAC/SP optional
Anti-corrosion:	Terminal anti-corrosion plating
Operating temperature:	-40°C to +125°C
Max. part temperature:	+165°C (ambient + rise)
Storage temperature:	-55°C to +165°C (part); -55 to +80°C (reel)
Reflow soldering:	Max. 3 cycles, 260°C / 40 s
MSL level:	Level 1, unlimited floor life
Rated voltage:	80V

Electrical Specifications

(Ta = 25°C)

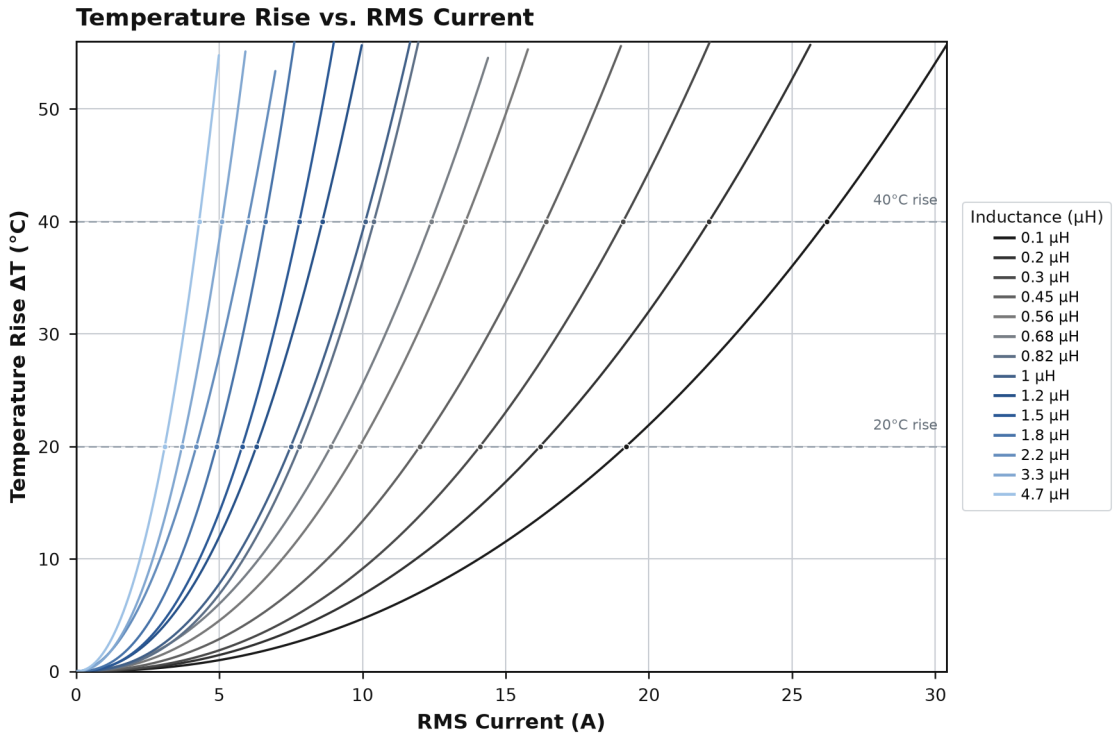
Part Number	Inductance ±20% (μH)	DCR (mΩ) typ/max	SRF typ (MHz)	Isat (A) 10%/20%/30%	Irms (A) 20℃/40℃
SYP3520-101MSN	0.1	2.3 / 2.7	360	7.5 / 11.7 / 15.9	19.2 / 26.2
SYP3520-201MSN	0.2	3.2 / 3.7	210	5.5 / 8.5 / 11.4	16.2 / 22.1
SYP3520-301MSN	0.3	4.1 / 4.8	165	4.5 / 7.2 / 9.7	14.1 / 19.1
SYP3520-451MSN	0.45	5.9 / 6.8	120	3.6 / 5.8 / 7.8	12 / 16.4
SYP3520-561MSN	0.56	7.9 / 9.1	105	3.2 / 5 / 6.9	9.9 / 13.6
SYP3520-681MSN	0.68	8.4 / 9.7	100	3.1 / 4.8 / 6.6	8.9 / 12.4
SYP3520-821MSN	0.82	10.4 / 12	95	2.8 / 4.5 / 6.2	7.8 / 10.4
SYP3520-102MSN	1	12.8 / 14.8	80	2.4 / 3.9 / 5.4	7.5 / 10.1
SYP3520-122MSN	1.2	15.8 / 18.2	75	2.2 / 3.5 / 4.7	6.3 / 8.6
SYP3520-152MSN	1.5	19.8 / 22.8	65	2 / 3.1 / 4.1	5.8 / 7.8
SYP3520-182MSN	1.8	24.1 / 27.8	60	1.9 / 2.9 / 4	4.9 / 6.6
SYP3520-222MSN	2.2	27.6 / 31.8	50	1.8 / 2.7 / 3.7	4.2 / 6
SYP3520-332MSN	3.3	42.9 / 49.4	40	1.4 / 2.1 / 2.8	3.7 / 5.1
SYP3520-472MSN	4.7	63.1 / 72.6	35	1.1 / 1.8 / 2.3	3.1 / 4.3

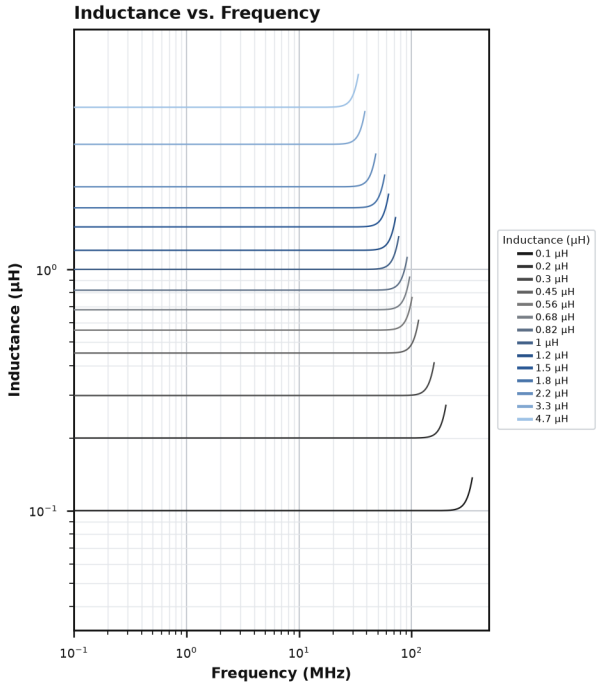
1. Inductance is measured at 1 MHz, 0.1 Vrms, 0 Adc, Ta = 25°C.
2. DCR is measured with a DC milliohm meter.
3. SRF is measured with a high-precision network analyzer.
4. Isat: DC current at which inductance drops by the stated percentage at 25°C; derating is required for high-temperature applications.
5. Irms: DC current causing the stated temperature rise (20°C/40°C). For reference only; verify by measurement in the end application.
6. Termination codes: SN = tin-nickel, SAC = tin-silver-copper; SP = tin-lead (non-RoHS).
7. Packaging: tape and reel, compliant with EIA-481; 7-inch and 13-inch reels available.
8. Electrical data are specified at Ta = 25°C. Specifications are subject to change without notice.

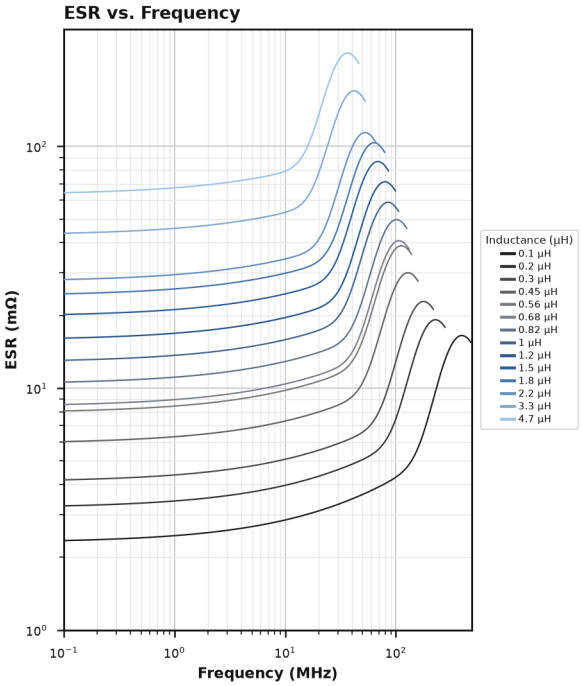
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Specifications subject to change without notice
Please refer to the latest version on our website

Performance Curves

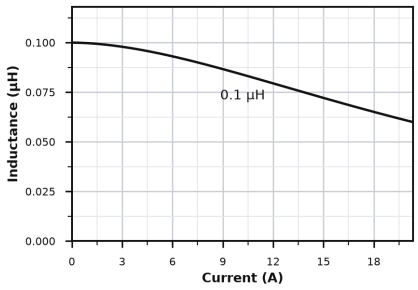


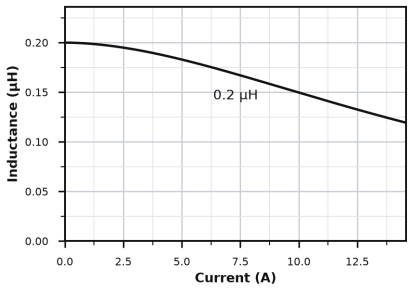


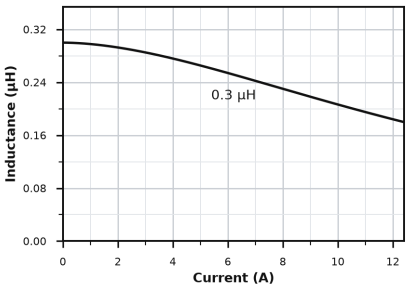


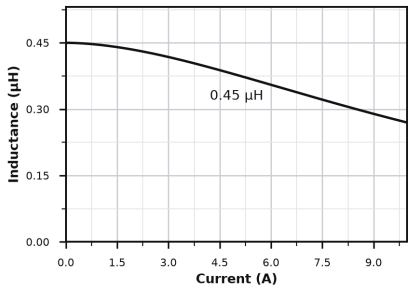
Test Condition: Ta=25℃, JEDEC standard PCB, natural convection. Curves derived from typical specifications for reference only.

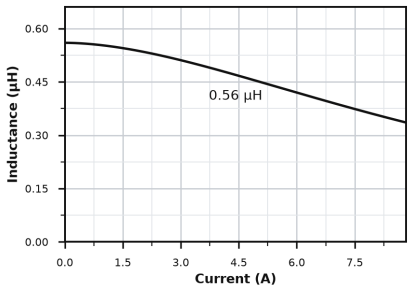
Inductance vs DC Current

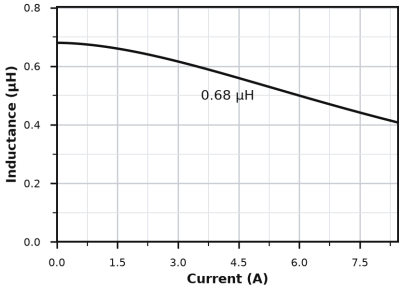


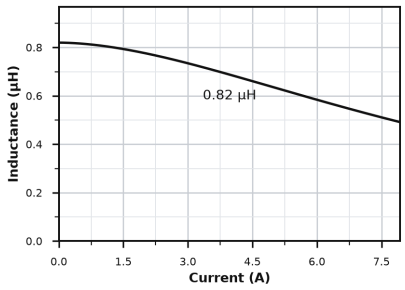




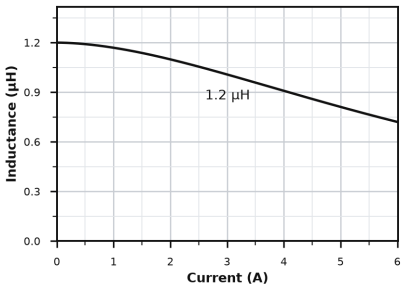


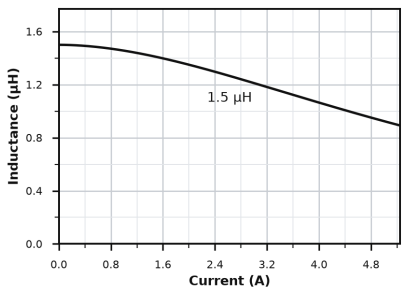


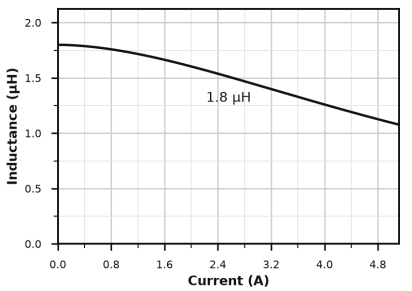


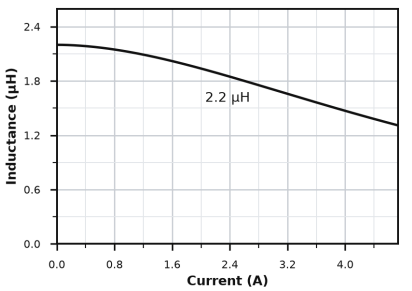


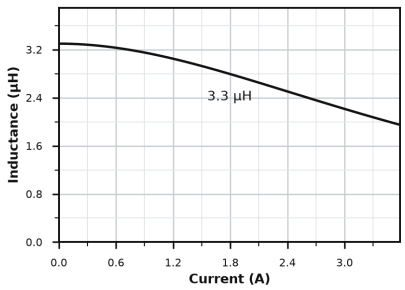


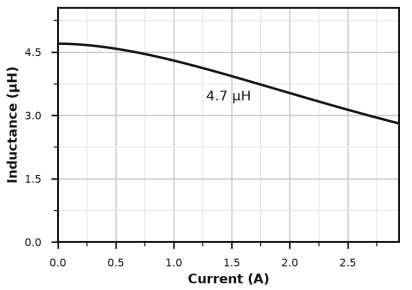






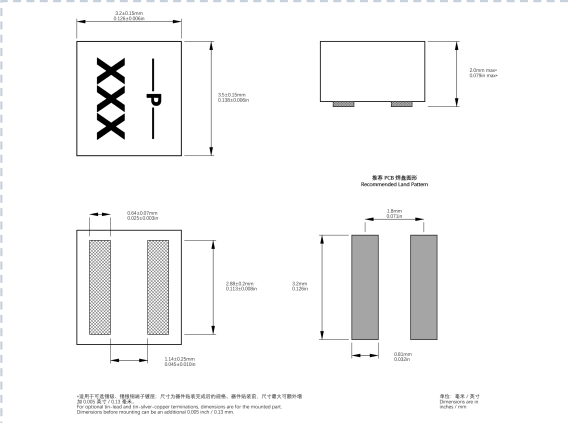






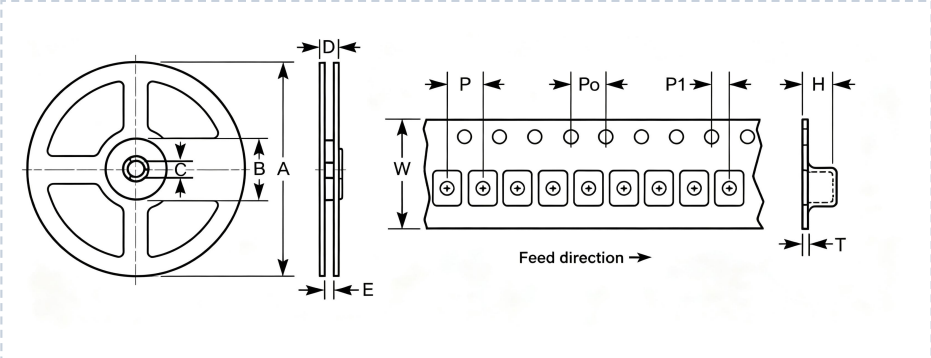
Note: Curves are plotted from Isat test points; actual performance shall be verified on the final product.

Dimensions & Recommended Land Pattern



Symbol	Parameter	Min	Typ	Max
L	Body Length (mm)	3.35	3.50	3.65
W	Body Width (mm)	3.05	3.20	3.35
H	Body Height (mm)	/	/	2.0
Wt	Weight (g)	0.110	0.115	0.120

Packaging



Parts per reel		Reel dimensions (mm)					Tape dimensions (mm)					
7" (178 mm)	13" (330 mm)	A	B	C	D	E	W	P	Po	P1	H	T
1000	3000	178/330	60/100	13	14.7	12.4	12	8	4	2	2.2	0.21

Packing method: Tape and reel, compliant with EIA-481

Quantity: 7" reel: 1000 pcs; 13" reel: 3000 pcs

Tape spec: Embossed carrier tape; dimensions per actual packing

Features & Applications

Features

· Lowest DCR with very low AC loss
· Excellent current handling with soft saturation

Applications

· Servers and desktop motherboards: multi-phase VRM/VRD and CPU core rails
· High-density, high-current power modules; FPGA/SoC supply
· Industrial power supplies demanding high efficiency and low temperature rise
· Automotive and telecom equipment with strict size limits