Molded Power Inductor

SYP3509 Series

Performance Series · 3.5×3.2×0.9 mm



RoHS Compliant · Halogen-Free

Features

Lowest profile molded inductor, only 0.9/1.0 mm high
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)

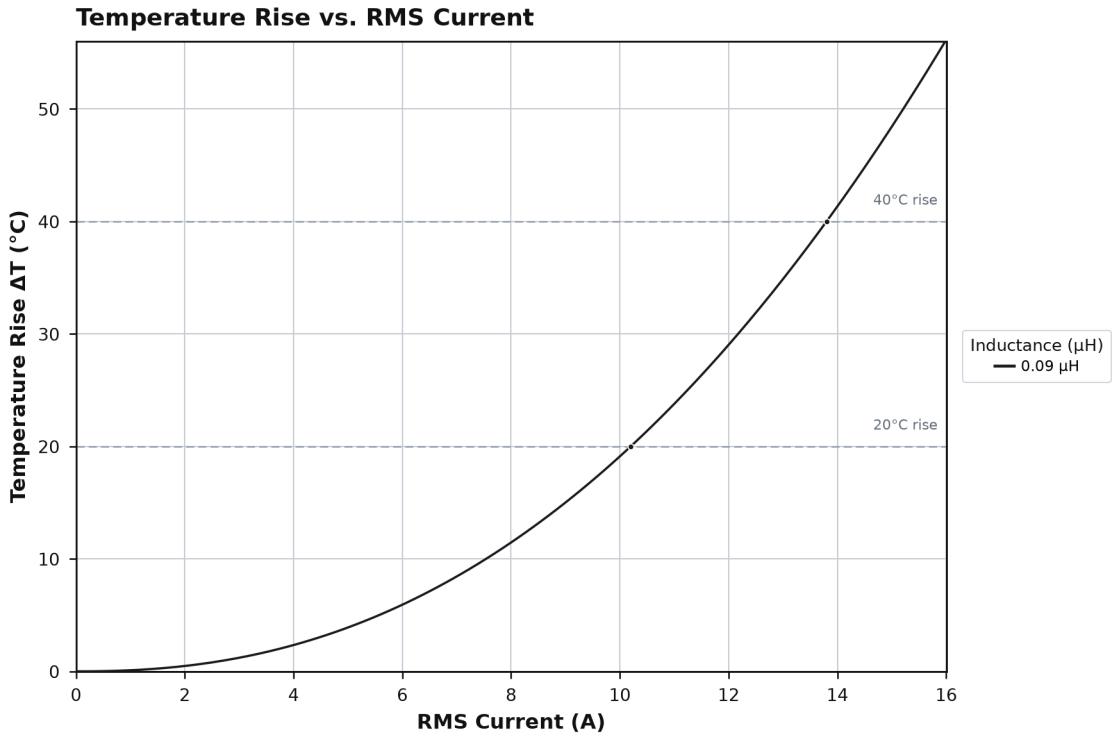
Part Number	Inductance ±20% (μH)	DCR (mΩ) typ/max	SRF typ (MHz)	Isat (A) 10%/20%/30%	Irms (A) 20℃/40℃
SYP3509-900MSN	0.09	5.9 / 7.1	360	5.6 / 9.1 / 13.9	10.2 / 13.8

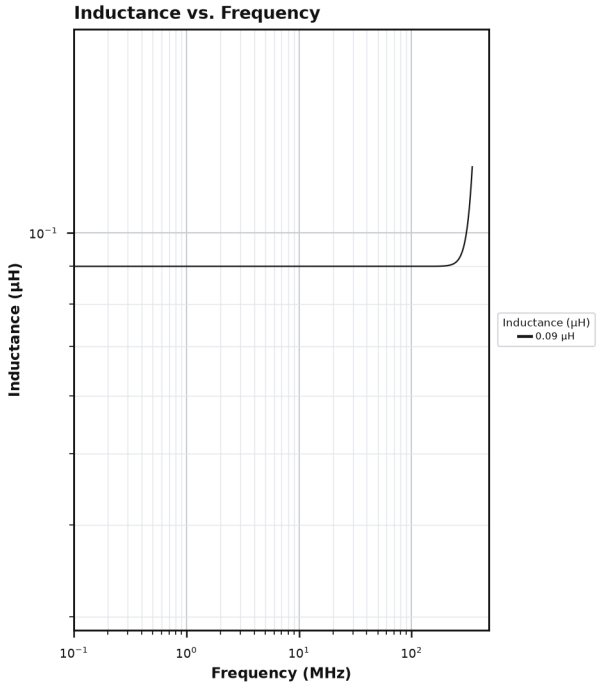
1. Inductance is measured at 1 MHz, 0.1 Vrms, 0 Adc, Ta = 25°C.
2. DCR is measured with a DC milliohm meter.
3. SRF is measured with a high-precision network analyzer.
4. Isat: DC current at which inductance drops by the stated percentage at 25°C; derating is required for high-temperature applications.
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.

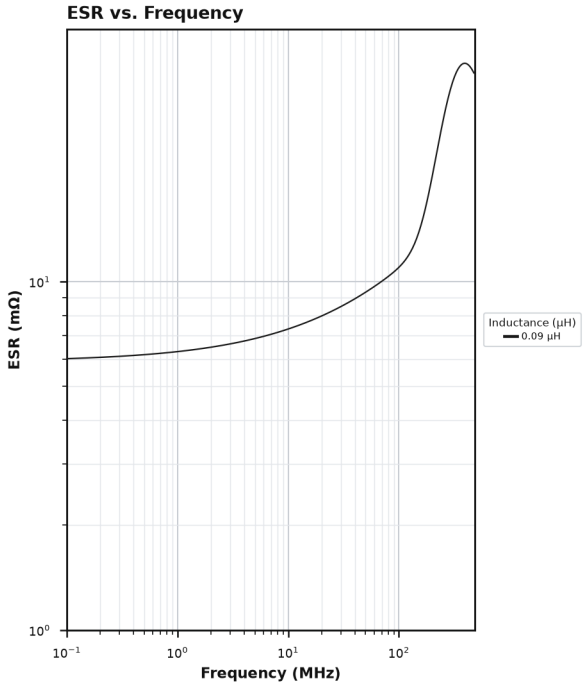
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Specifications subject to change without notice
Please refer to the latest version on our website

Performance Curves

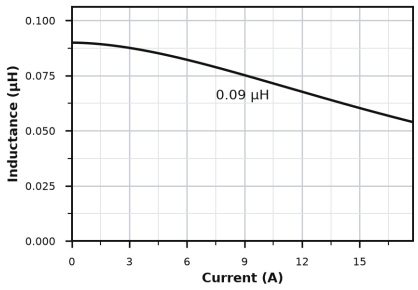






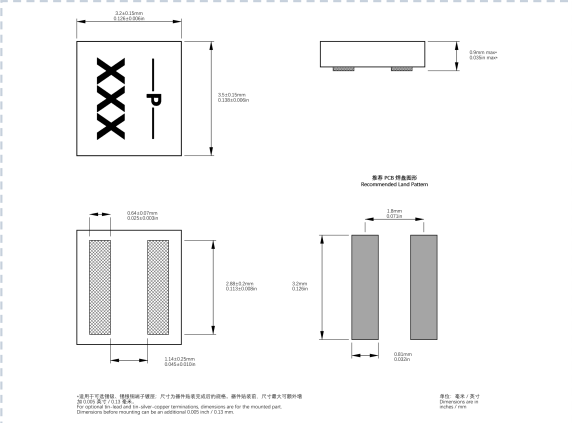
Test Condition: Ta=25℃, JEDEC standard PCB, natural convection. Curves derived from typical specifications for reference only.

Inductance vs DC Current



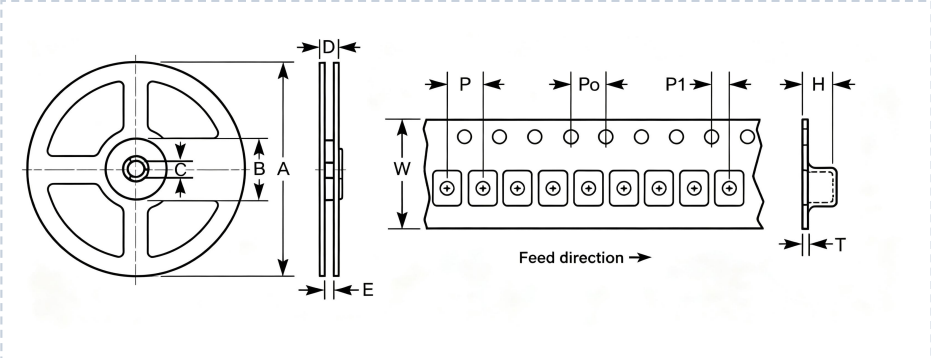
Note: Curves are plotted from Isat test points; actual performance shall be verified on the final product.

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)	/	/	0.9
Wt	Weight (mg)	49	49	49

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
2000	7000	178/330	60/100	13	14.7	12.4	12	8	4	2	1.22	0.23

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

Quantity: 7" reel: 2000 pcs; 13" reel: 7000 pcs

Tape spec: Embossed carrier tape; dimensions per actual packing

Features & Applications

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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