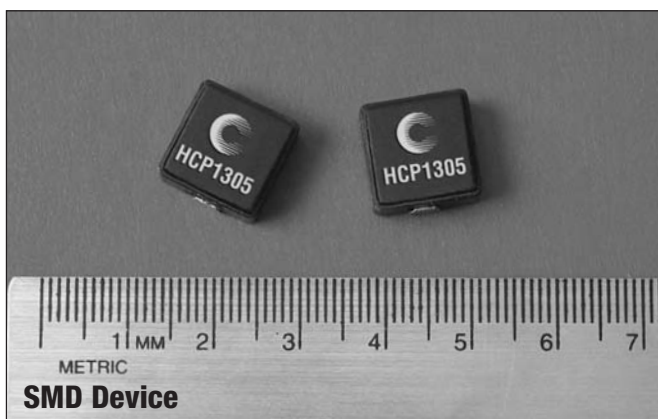


High Current, Pressed, Power Inductors

HCP1305 Series



Description

- 125°C maximum temperature operation
- 12.9 x 13.8 x 5.0mm surface mount package
- Magnetically shielded, low EMI
- Pressed powder iron core material
- Enhanced core coating eliminates rusting and provides high insulation impedance
- Inductance range from 0.47µH to 2.2µH
- Current range from 65.0 Amps to 20 Amps
- Frequency range up to 1MHz
- Black or gray aesthetic color

Applications

- Notebook power
- VRM, multi-phase buck regulator
- DC-DC converters
- PC workstations/Servers/Desktop
- Routers



Environmental Data

- Storage temperature range: -55°C to +125°C
- Operating temperature range: -55°C to +125°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

Packaging

- Supplied in tape and reel packaging, 400 parts per reel, 13" diameter reel

Product Specifications							
Part Number ⁵	Rated Inductance (µH)	OCL ¹ µH ± 20%	I _{rms} ² Amps	I _{sat} ³ Amps	DCR mΩ@20°C (Typical)	DCR mΩ@20°C (Maximum)	K-factor ⁴
HCP1305-R47-R	0.47	0.47	38	65	1.1	1.3	181
HCP1305-R56-R	0.56	0.56	36	55	1.3	1.5	130
HCP1305-1R0-R	1.0	1.0	29	50	2.1	2.5	134
HCP1305-1R5-R	1.5	1.5	23	48	3.4	4.1	105
HCP1305-2R2-R	2.2	2.2	20	32	4.6	5.5	77

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.25V, 0.0A_{dc}

2 I_{rms}: DC current for an approximate ΔT rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 125°C under worst case operating conditions verified in the end application.

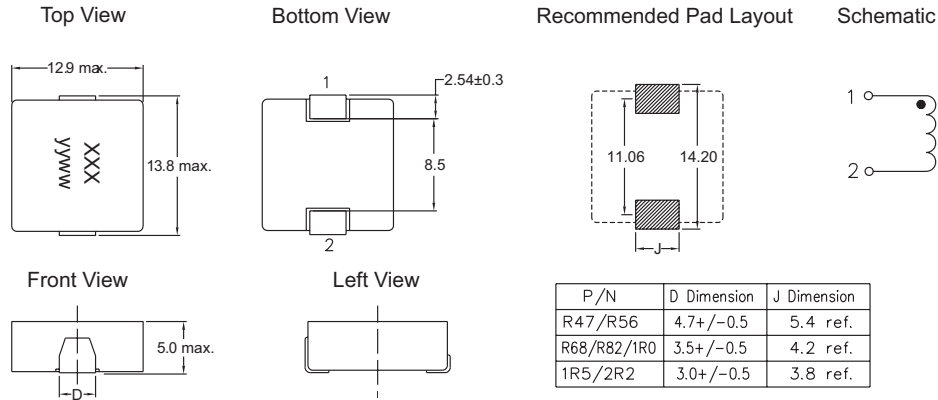
3 I_{sat}: Amps for approximately 20% rolloff (@25°C).

4 K-factor: Used to determine B_{p-p} for core loss (see graph). B_{p-p} = K * L * ΔI, B_{p-p}: (Gauss), K: (K-factor from table), L: (inductance in µH), ΔI (peak-to-peak ripple current in amps).

5 Part Number Definition: HCP1305-xxx-R

- HCP1305 = Product code and size
- xxx= Inductance value in µH, R = decimal point. If no "R" is present, then third character = # of zeros
- "-R" suffix = RoHS compliant

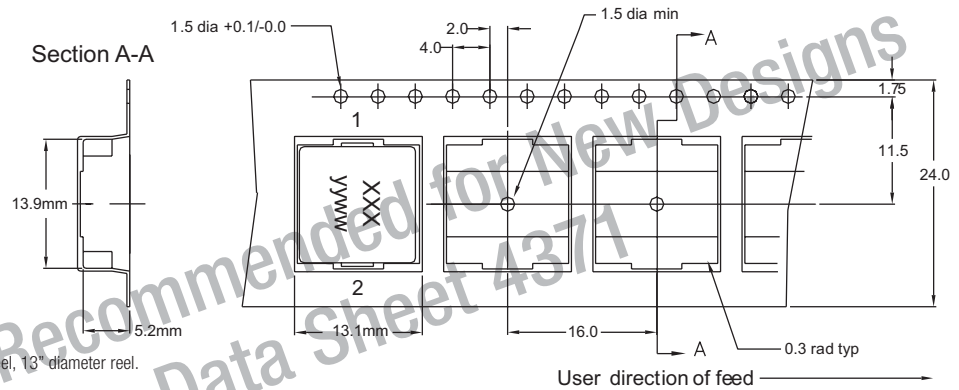
Dimensions - mm



Part Marking: HCP1305

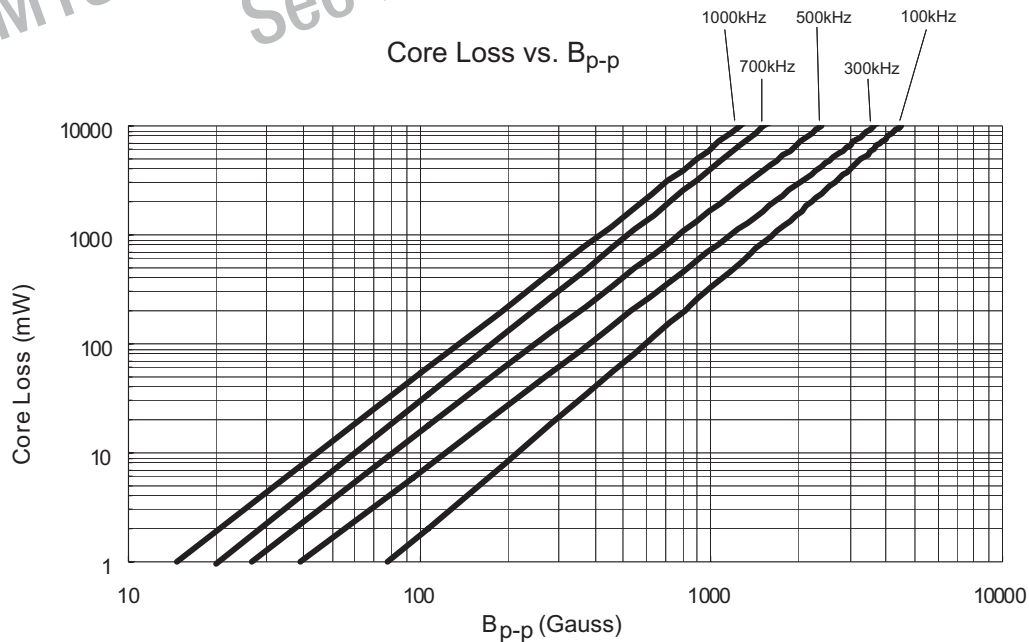
xx = Inductance value in μH . (R = Decimal point). If no "R" is present, then last character is # of zeros yyww = Date code

Packaging Information - mm

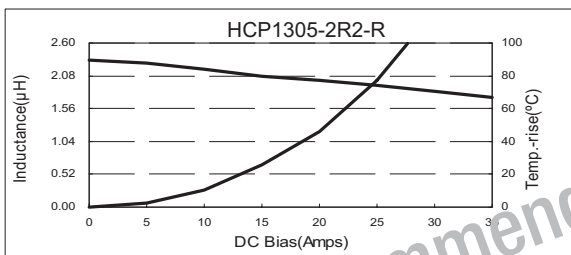
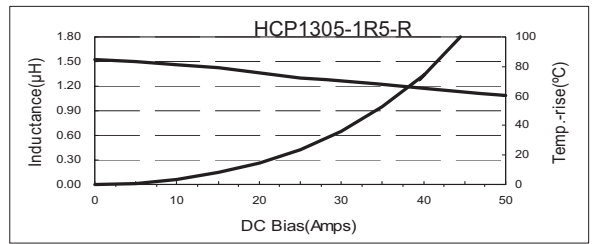
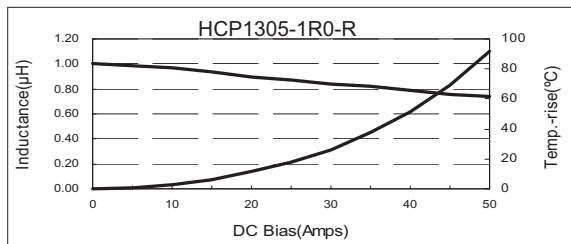
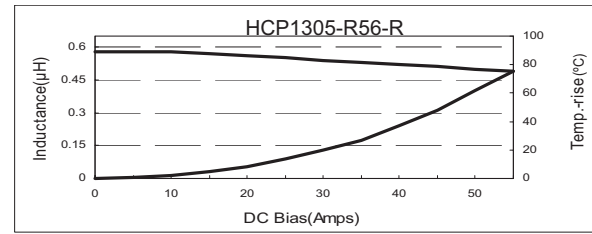
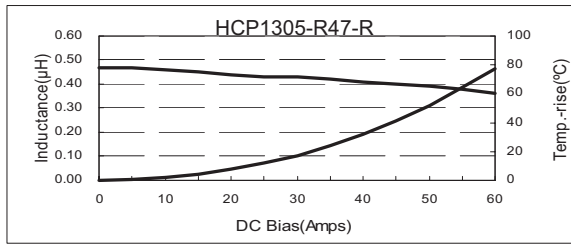


Supplied in tape-and-reel packaging, 400 parts per reel, 13" diameter reel.

Core Loss



Performance Graphs



HCP1305 Recommended for New Designs
See Data Sheet 4371

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