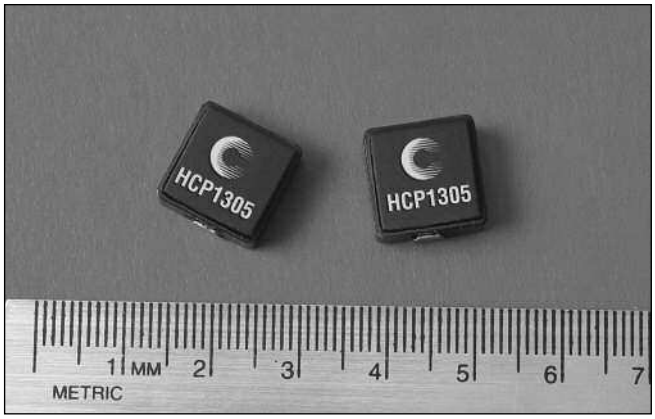
COILTRONICS®

COOPER Bussmann

HCP1305 Series
High Current Pressed Power Inductors

RoHS 2002/95/EC



Description

- 125°C maximum temperature operation
- 12.9mm x 13.8mm x 5.0mm surface mount package
- 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

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

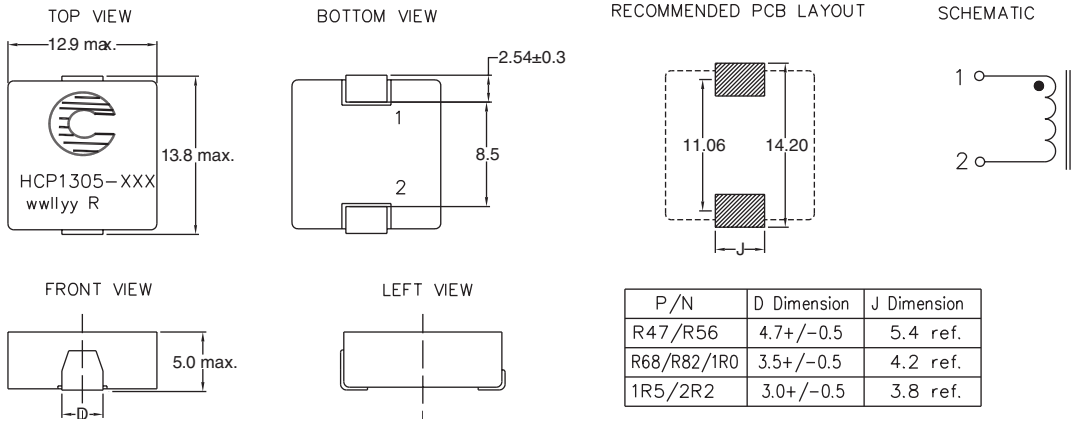
Packaging

- Supplied in tape and reel packaging, 400 parts per reel

Part Number	Rated Inductance (µH)	OCL (1) µH ± 20%	Irms (2) Amperes	Isat (3) Amperes	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-R68-R	0.68	0.68	34	53	1.5	1.7	172
HCP1305-R82-R	0.82	0.82	31	52	2.0	2.3	167
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 Test Parameters: 100kHz, 0.25V, 0.0Adc.
(2) Irms: DC current for an approximate ΔT 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 that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.
(3) Isat Amperes peak for approximately 20% rolloff (@20°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 uH), ΔI (Peak to peak ripple current in Amps).

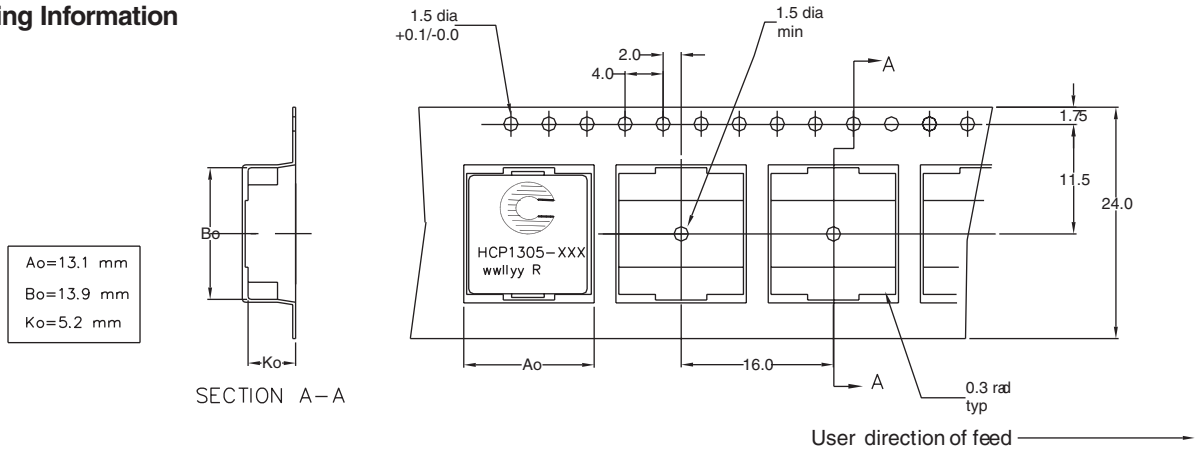
Mechanical Diagrams



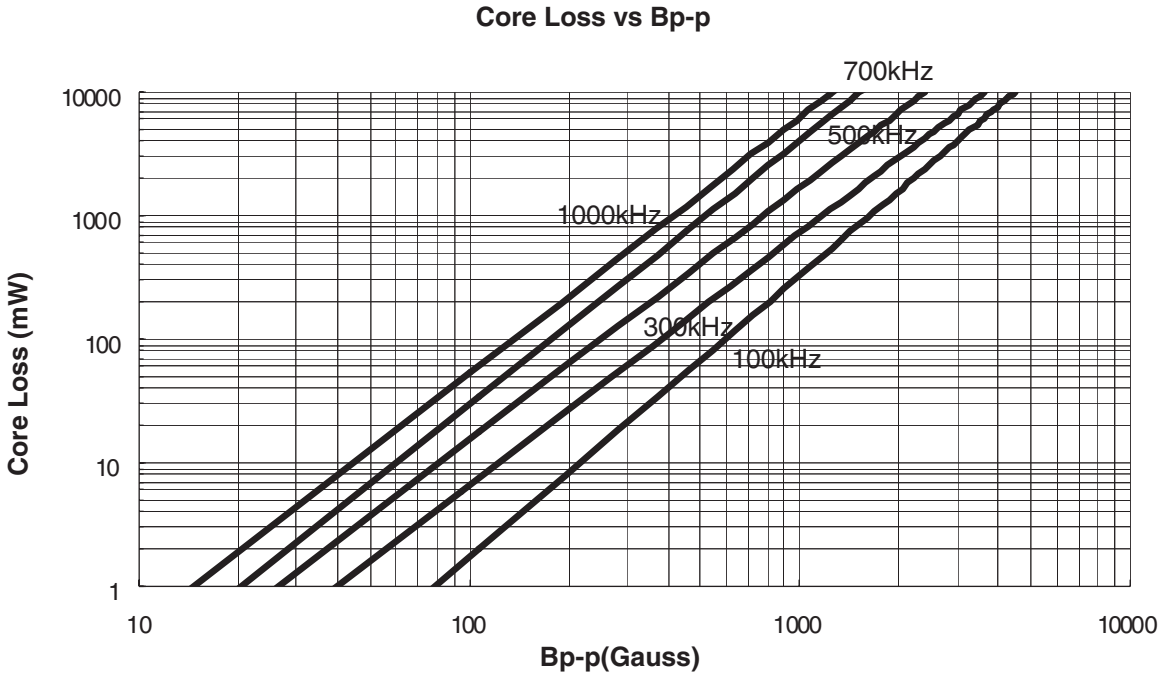
P/N	D Dimension	J Dimension
R47/R56	4.7+/-0.5	5.4 ref.
R68/R82/1R0	3.5+/-0.5	4.2 ref.
1R5/2R2	3.0+/-0.5	3.8 ref.

Dimensions are in millimeters.
wwlly = Date Code. R = Revision Level.

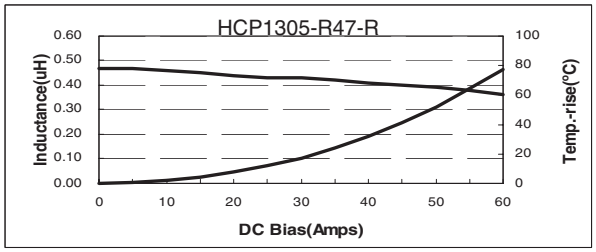
Packaging Information

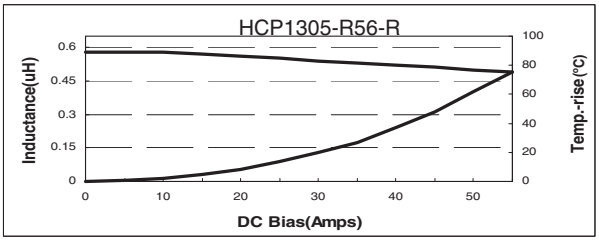


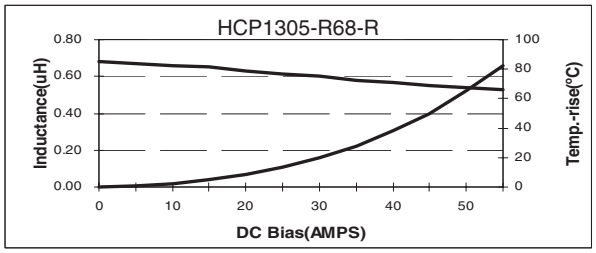
Core Loss

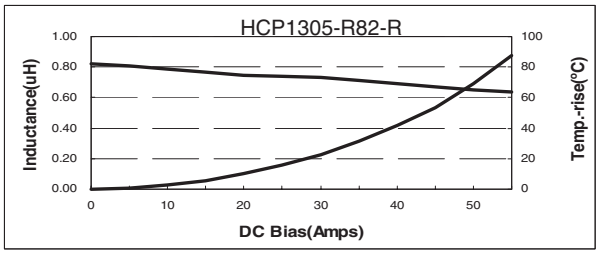


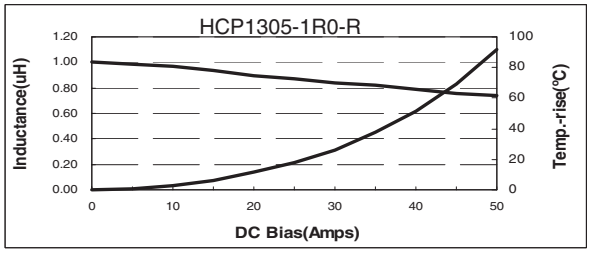
Performance Graphs

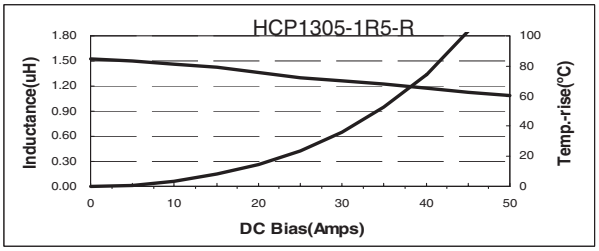


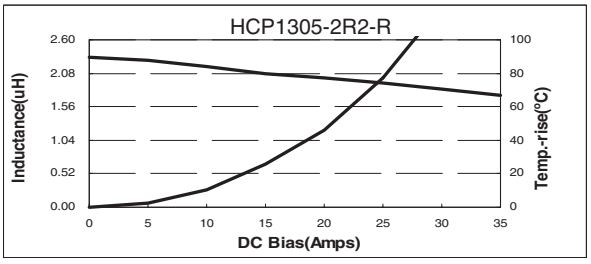












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