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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

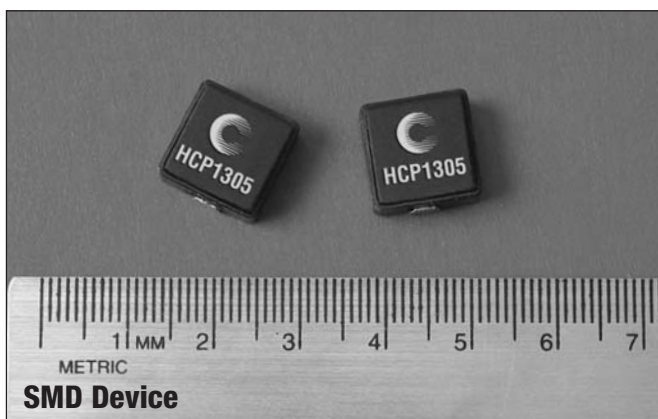
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# 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

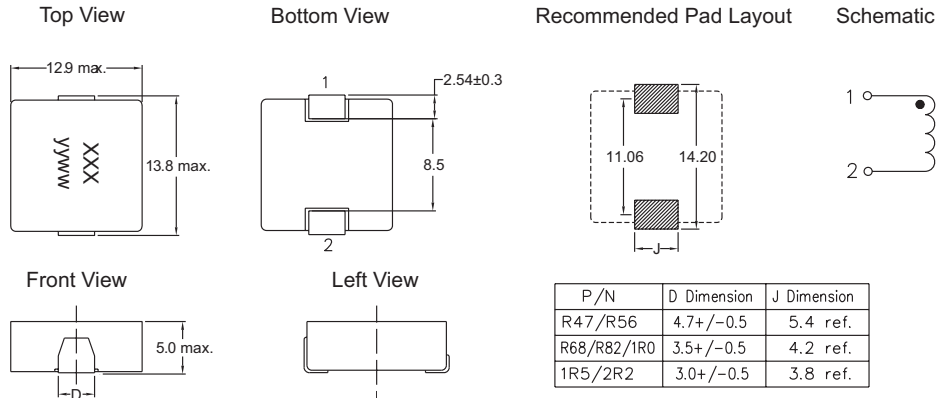
- Supplied in tape and reel packaging, 400 parts per reel, 13" diameter reel

Product Specifications							
Part Number <sup>5</sup>	Rated Inductance (µH)	OCL <sup>1</sup> µH ± 20%	I <sub>rms</sub> <sup>2</sup> Amps	I <sub>sat</sub> <sup>3</sup> Amps	DCR mΩ@20°C (Typical)	DCR mΩ@20°C (Maximum)	K-factor <sup>4</sup>
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<sub>dc</sub>  
 2 I<sub>rms</sub>: 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<sub>sat</sub>: Amps for approximately 20% rolloff (@25°C).

4 K-factor: Used to determine B<sub>p-p</sub> for core loss (see graph). B<sub>p-p</sub> = K \* L \* ΔI, B<sub>p-p</sub>: (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

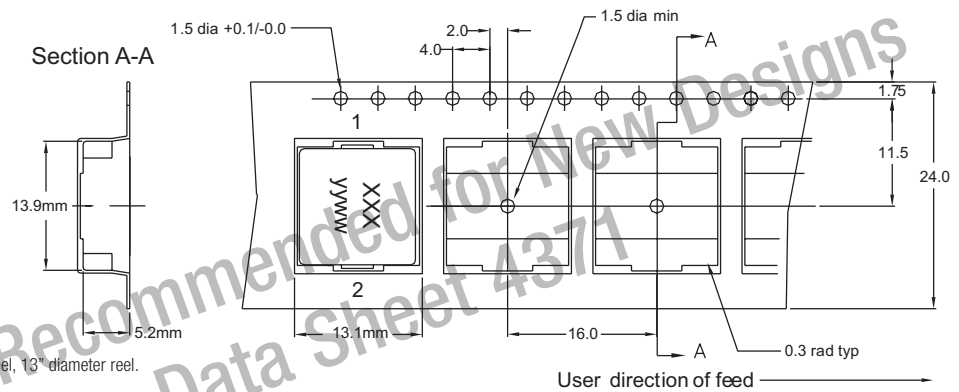
### Dimensions - mm



Part Marking: HCP1305

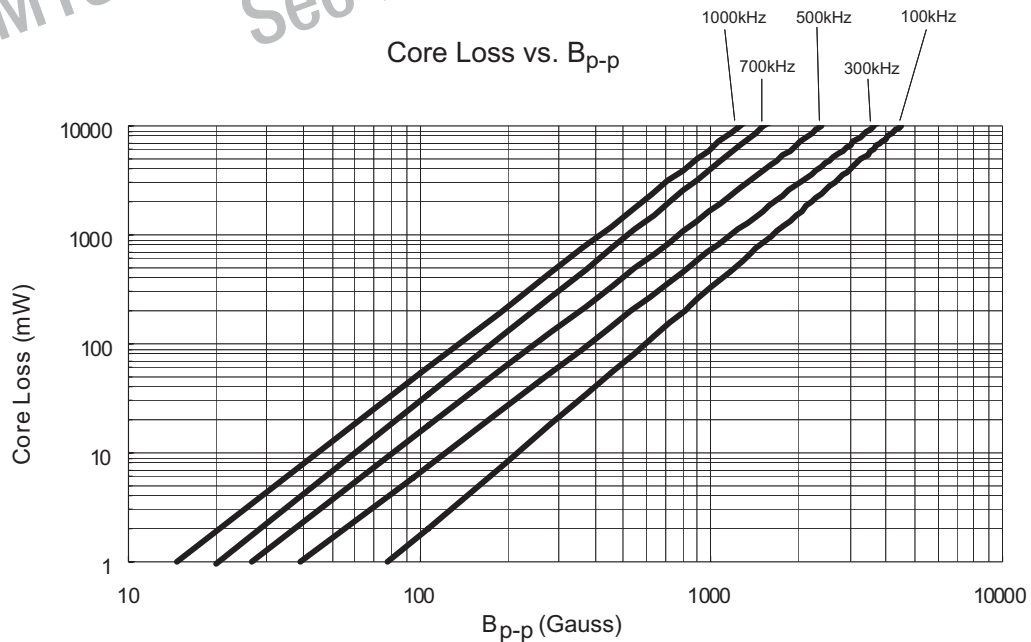
xx = Inductance value in  $\mu\text{H}$ . (R = Decimal point). If no "R" is present, then last character is # of zeros yyww = Date code

### Packaging Information - mm



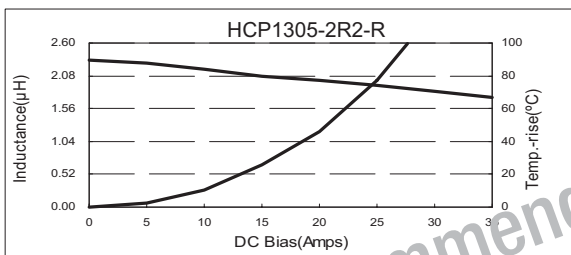
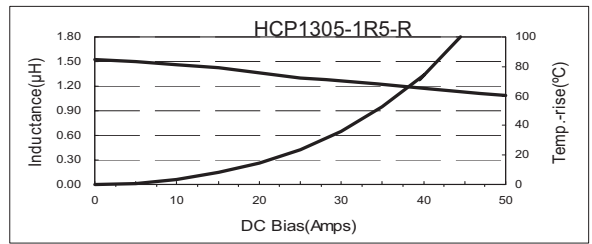
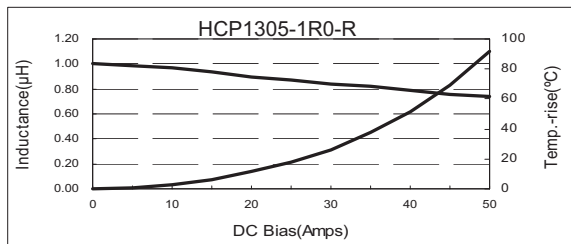
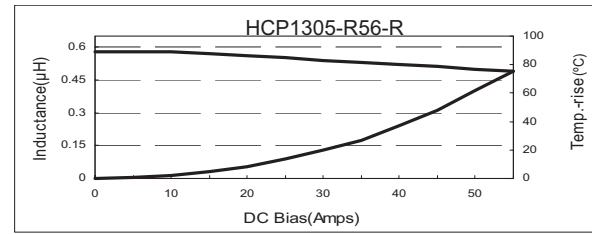
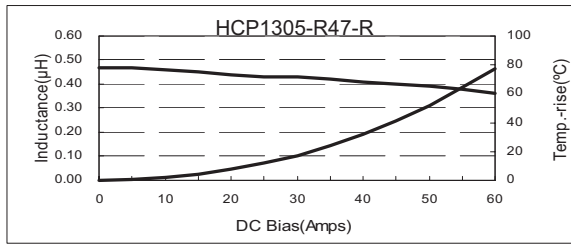
Supplied in tape-and-reel packaging, 400 parts per reel, 13" diameter reel.

### Core Loss





## Performance Graphs



HCP1305 Recommended for New Designs  
See Data Sheet 4371

### North America

Cooper Electronic Technologies  
1225 Broken Sound Parkway NW  
Suite F  
Boca Raton, FL 33487-3533  
Tel: 1-561-998-4100  
Fax: 1-561-241-6640  
Toll Free: 1-888-414-2645

Cooper Bussmann  
P.O. Box 14460  
St. Louis, MO 63178-4460  
Tel: 1-636-394-2877  
Fax: 1-636-527-1607

### Europe

Cooper Electronic Technologies  
Cooper (UK) Limited  
Burton-on-the-Wolds  
Leicestershire • LE12 5TH UK  
Tel: +44 (0) 1509 882 737  
Fax: +44 (0) 1509 882 786

Cooper Electronic Technologies  
Avda. Santa Eulalia, 290  
08223  
Terrassa, (Barcelona), Spain  
Tel: +34 937 362 812  
+34 937 362 813  
Fax: +34 937 362 719

### Asia Pacific

Cooper Electronic Technologies  
1 Jalan Kilang Timor  
#06-01 Pacific Tech Centre  
Singapore 159303  
Tel: +65 278 6151  
Fax: +65 270 4160

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