COOPER COILTRONICS®

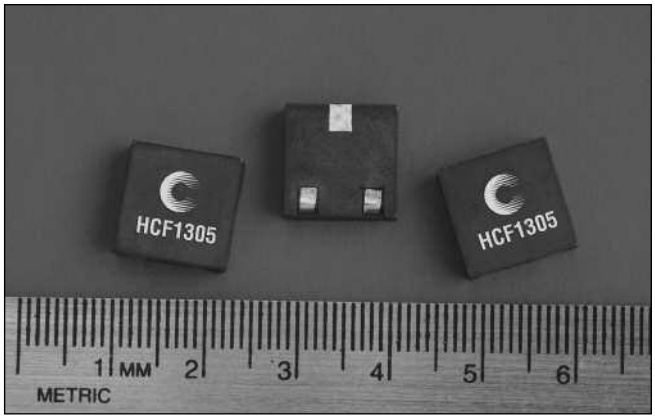
COOPER Bussmann

HCF1305 Series
Power Inductors

RoHS 2002/95/EC

Description

- 125°C maximum total temperature operation
- 12.5mm x 12.5mm x 5.0mm ferrite core material package
- Low profile surface mount inductors designed for higher speed switch mode applications requiring low voltage and high current
- Design utilizes ferrite core with high DC bias resistance and low core loss
- Inductance range from 0.47µH to 4.7µH
- Current range from 36.0 Amps to 10.4 Amps
- Frequency range 100kHz to 1MHz



Applications

- Next generation processors
- High current DC-DC converters
- VRM, multi-phase buck regulators
- PC Workstations, Routers, Servers
- Telecom soft switches, Base stations

Packaging

- Supplied in tape and reel packaging, 600 parts per reel

Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

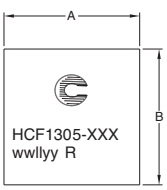
Part Number	Rated Inductance (µH)	OCL (1) µH ± 20%	Irms (2) Amperes	Isat (3) Amperes	Isat2 (4) Amperes	DCR mΩ@20°C (Typical)	DCR mΩ@20°C (Maximum)	K-factor (5)
HCF1305-R47-R	0.47	0.47	32.0	36.0	30.0	0.83	1.00	21
HCF1305-R56-R	0.56	0.56	32.0	30.0	22.5	0.83	1.00	21
HCF1305-1R0-R	1.00	1.00	22.0	24.0	20.0	1.58	1.90	14
HCF1305-1R2-R	1.20	1.20	22.0	20.0	15.0	1.58	1.90	14
HCF1305-1R8-R	1.80	1.80	16.3	18.0	15.0	2.58	3.10	10
HCF1305-2R2-R	2.20	2.20	16.3	15.0	11.2	2.58	3.10	10
HCF1305-3R0-R	3.00	3.00	13.2	14.4	12.0	4.08	4.90	8.3
HCF1305-3R3-R	3.30	3.30	13.2	12.5	9.0	4.08	4.90	8.3
HCF1305-4R0-R	4.00	4.00	10.9	12.0	10.0	6.0	7.2	6.9
HCF1305-4R7-R	4.70	4.70	10.9	10.4	7.5	6.0	7.2	6.9

1) OCL: Open Circuit Inductance test parameters: 100kHz, 0.1Vrms, 0.0Adc. OCL@-40°C can be lower than OCL@20°C by 15% max.
2) Irms: DC current for an approximate DT 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) Isat1: Amperes Peak for approximately 30% rolloff (@25°C)
4) Isat2: Amperes Peak for approximately 30% rolloff (@125°C)
5) K-factor: Used to determine B p-p for core loss (see graph). B p-p = K*L*ΔI B p-p:(mT), K: (K factor from table), L: (Inductance in µH), ΔI (Peak to peak ripple current in Amps).

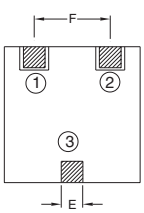
Part number definition:
HCF1305-XXX-R
HCF1305 = Product code and size
XXX = Inductance value in uH.
R = Decimal point. If no R is present, third character = #of zeros
-R suffix indicates RoHS compliant

Mechanical Diagrams

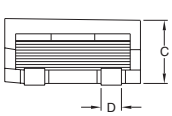
TOP VIEW



BOTTOM VIEW



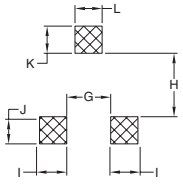
FRONT VIEW



DIMENSION TABLE

A: 12.5max	G: 4.00 Ref
B: 12.5max	H: 5.40 Ref.
C: 5.0max	I: 3.00 Ref.
D: 2.00 ref	J: 4.00 Ref.
E: 2.40 +/- 0.10	K: 4.00 Ref.
F: 6.90 +/- 0.30	L: 3.4 Ref.

RECOMMENDED PCBLAYOUT

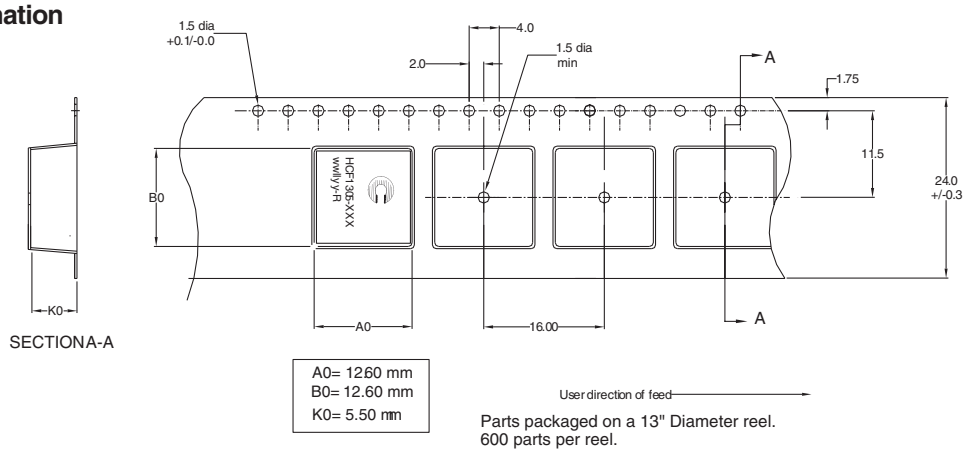


SCHEMATIC

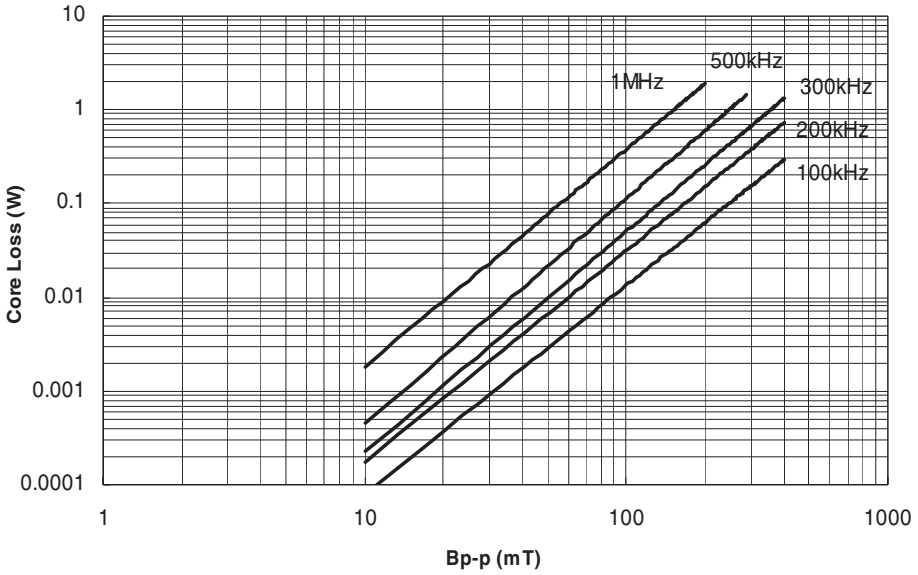
Dimensions in Millimeters

wwllyy=Date code, R=Revision Level

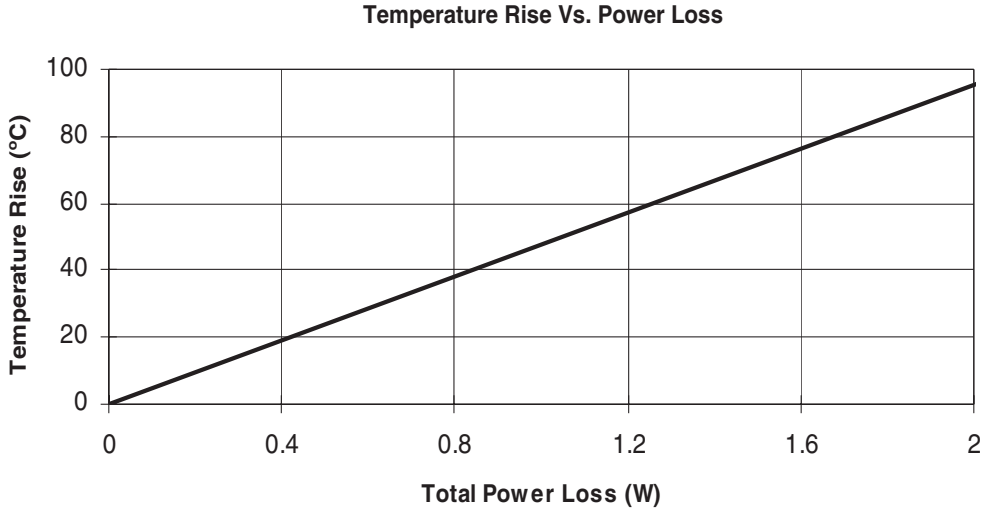
Packaging Information



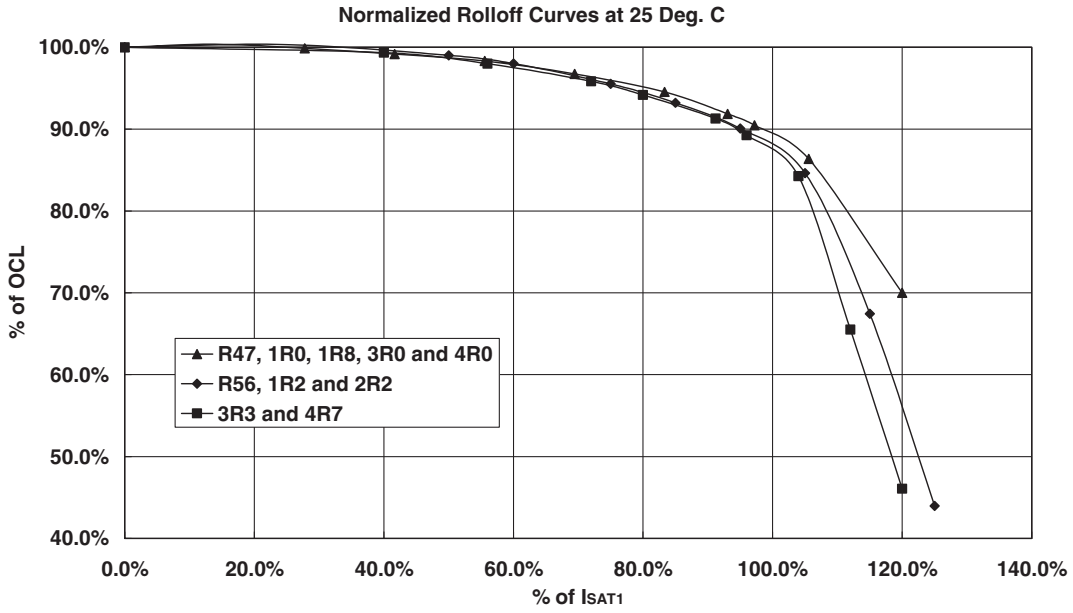
Core Loss

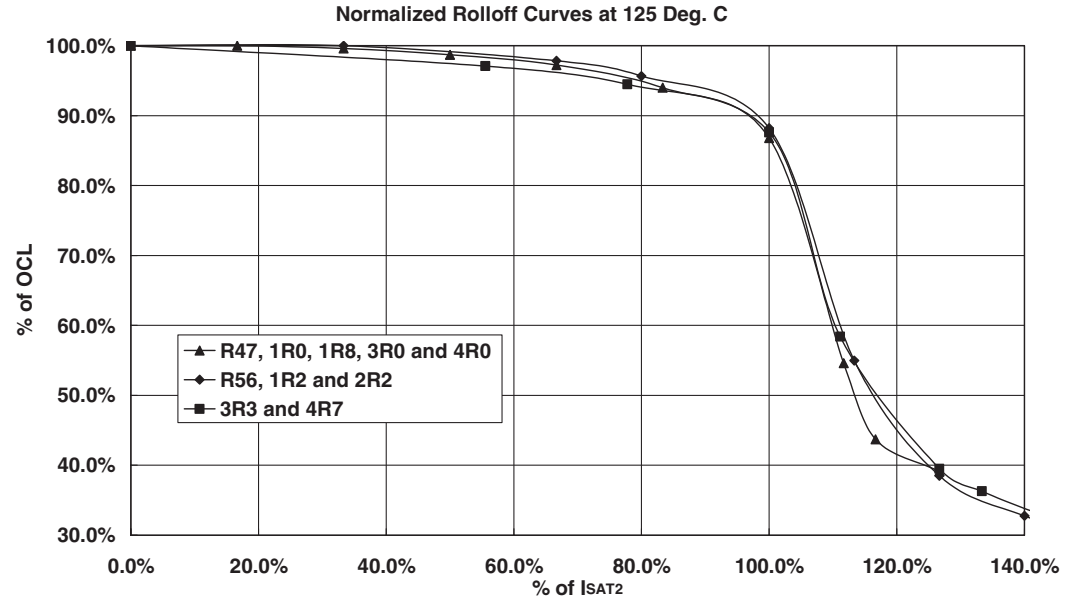


Temperature Rise vs. Total Loss



Inductance Characteristics





PM-4133 3/07

Visit us on the Web at www.cooperbussmann.com

1225 Broken Sound Pkwy. Suite F Boca Raton, FL 33487

Tel: +1-561-998-4100 Toll Free: +1-888-414-2645 Fax: +1-561-241-6640

AMEYA360
Components Supply Platform

Authorized Distribution Brand :

Website :

Welcome to visit www.ameya360.com

Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com