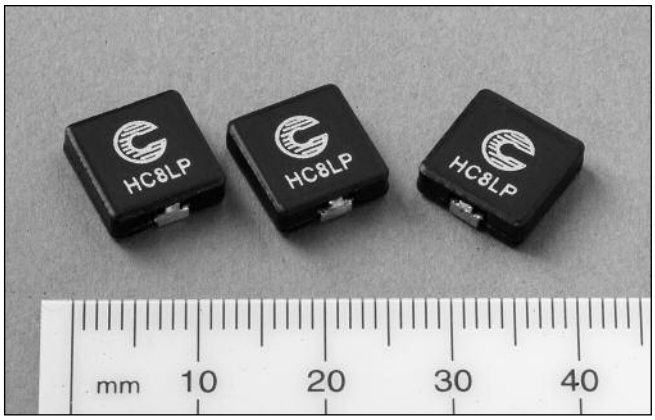
COOPER COILTRONICS®

COOPER Bussmann

HC8LP Series
Power Inductors

RoHS 2002/95/EC



Description

- 155°C maximum temperature operation
- Low profile surface mount inductors designed for higher speed switch mode applications requiring low voltage, and high current
- Design utilizes high temperature powder iron material with a non-organic binder to eliminate thermal aging
- Inductance range from 0.17 uH to 47.9 uH
- Current range from 29 Amps to 1.8 Amps
- Frequency range 1kHz to 500kHz

Applications

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

Environmental Data

- Storage temperature range: -40°C to +155°C
- Operating temperature range: -40°C to +155°C (Range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds max.

Packaging

- Supplied in tape and reel packaging, 800 parts per reel

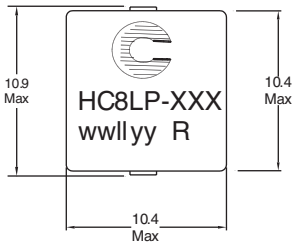
Part Number	Rated Inductance µH	OCL (1) nominal +/-20% µH	Irms (2) Amperes (Typ.)	Isat (3) Amperes 15% rolloff	Isat (4) Amperes 30% rolloff	DCR (mΩ) max. @ 20°C	Volts (5) µSec (VµS) (ref.)
HC8LP-R15-R	0.15	0.170	29.0	31	56	1.40	7.8
HC8LP-R39-R	0.39	0.430	20.2	19	34	2.80	4.7
HC8LP-R75-R	0.75	0.830	15.6	13.5	24	4.70	3.4
HC8LP-1R2-R	1.2	1.35	12.4	10.1	18.7	7.50	2.6
HC8LP-1R9-R	1.9	1.92	10.1	8.7	15.5	11.5	4.1
HC8LP-2R6-R	2.6	2.67	8.3	7.4	13.1	17.1	4.8
HC8LP-3R5-R	3.5	3.56	6.9	6.4	11.4	24.5	5.6
HC8LP-4R5-R	4.5	4.57	6.5	5.6	10.0	27.6	6.3
HC8LP-5R6-R	5.6	5.71	5.5	5.1	9.0	38.9	7.1
HC8LP-6R9-R	6.9	6.98	5.2	4.6	8.1	42.8	7.8
HC8LP-8R2-R	8.2	8.37	4.5	4.2	7.4	58.0	8.6
HC8LP-100-R	10.0	9.90	4.3	6.8	3.8	62.9	9.3
HC8LP-150-R	15.0	15.20	3.4	3.1	5.5	99.4	11.6
HC8LP-220-R	22.0	21.70	2.8	2.6	4.6	149	13.7
HC8LP-330-R	33.0	32.10	2.3	2.1	3.8	224	16.8
HC8LP-470-R	47.0	47.90	1.8	1.7	3.1	344	20.3

1) Open Circuit Inductance test parameters: 100KHz, 1.0V, 0.0Adc
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 155°C under worst case operating conditions verified in the end application.
3) Isat Amperes Peak for approximately 15% rolloff (@20°C)
4) Isat Amperes Peak for approximately 30% rolloff (@20°C)
5) Applied Volt-Time product (V-µS) across the inductor. This value represents the applied V-µS at operating frequency necessary to generate additional core loss which contributes to the 40°C temperature rise. De-rating of the Irms is required to prevent excessive temperature rise. The 100% V-uS rating is equivalent to a ripple current Ip-p of 20% of Isat (30% rolloff option).

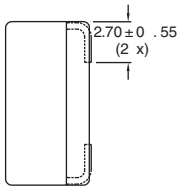
Part number definition:
HC8LP-xxx-R
HC8LP = Product code and size
xxx = Inductance in µH. R = decimal point.
If no R is present third character = # of zeros.
-R suffix indicates RoHS compliant

Mechanical Diagrams

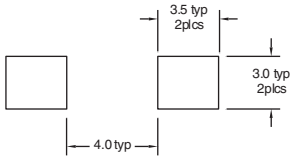
TOP VIEW



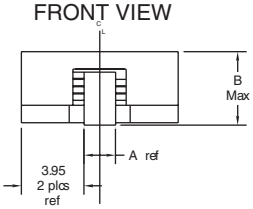
SIDE VIEW



RECOMMENDED PCB PAD LAYOUT



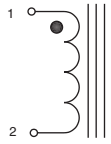
FRONT VIEW



FRONT VIEW
Dimesional Table

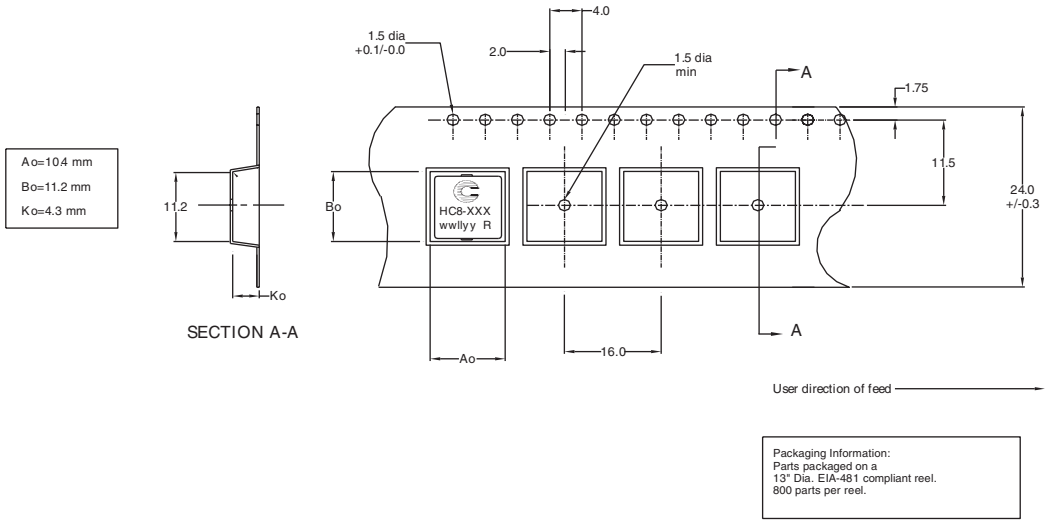
PN	A ref mm	B max mm
R15	2.1	3.5
R39	2.1	3.5
R75	2.1	3.5
1R2	2.1	3.3
1R9 thru 470	2.7	3.5

SCHEMATIC



Dimensions in Millimeters
wwllyy = Date Code, R = Revision Level

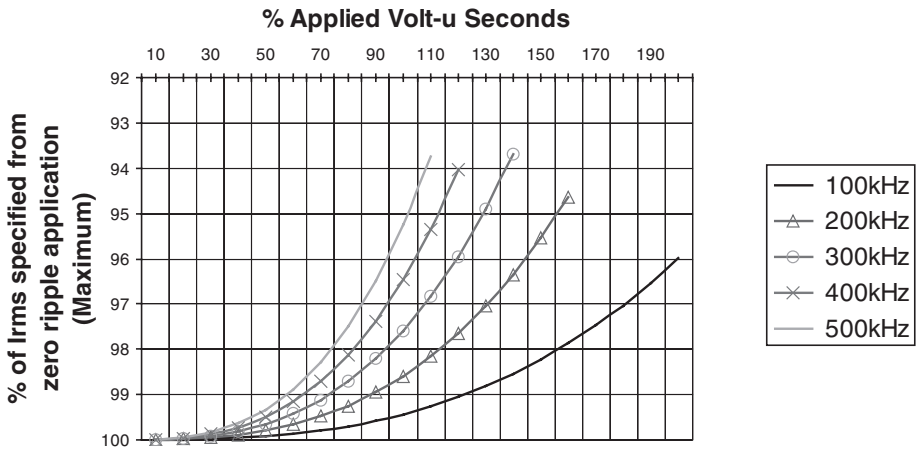
Packaging Information



Packaging Information:
Parts packaged on a
13" Dia. EIA-481 compliant reel.
800 parts per reel.

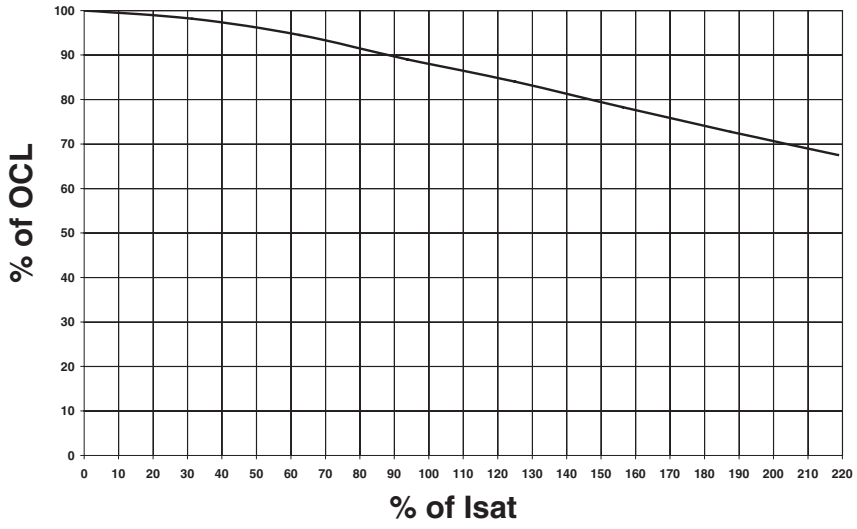
Core Loss

Irms DERATING WITH CORE LOSS



Rolloff

OCL vs Isat



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