



HC8LP Series Power Inductors

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

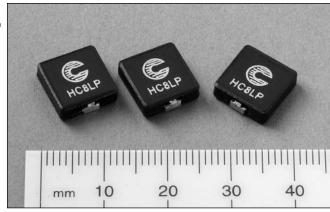
Applications

- 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 uH	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	μπ 0.15			31	56		7.8
		0.170	29.0			1.40	
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

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

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 lp-p of 20% of lsat (30% rolloff option).



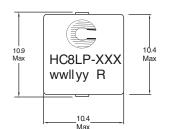
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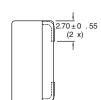


Mechanical Diagrams

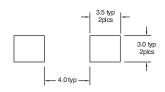


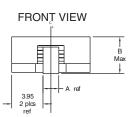


SIDE VIEW



RECOMMENDED PCB PAD LAYOUT





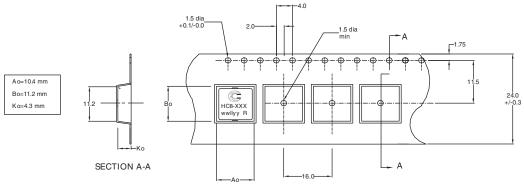
	mm	mm
R15	2.1	3.5
R39	2.1	3.5
R75	2.1	3.5
1R2	2.1	3.3
1R9 thru 470	2.7	3.5

SCHEMATIC



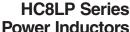
Dimensions in Millimeters wwllyy = Date Code, R = Revision Level

Packaging Information



User direction of feed -

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

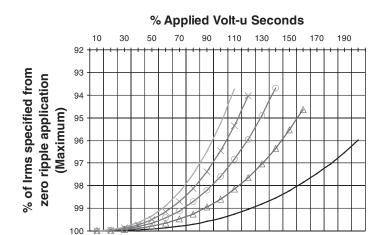


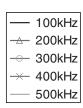
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Core Loss

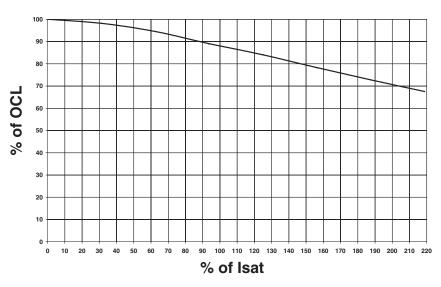
Irms DERATING WITH CORE LOSS





Rolloff

OCL vs Isat





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