Effective October 2015 Supersedes March 2007

HC2LP Low profile, high current power inductors



Product description

- · Compact footprint
- Designed for high density, high current/low voltage applications
- Foil technology that adds higher reliability factor over the traditional magnet wire used for higher frequency circuit designs
- Frequency Range up to 1MHz
- · Ferrite core material

Applications

- Distributed power systems DC-DC converters
- General-purpose low voltage supplies
- Computer systems
- Servers
- Point of Load (POL) converters
- Industrial Equipment
- Networking/Telecom power supplies

Environmental data

- Storage temperature range (component): -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient + self-temperature rise).
- Solder reflow temperature: J-STD-020D compliant.





Product specifications

OCL1 (µH) ±20%	l _{rms} ² amps (approx.)	l _{sat} ³ amps (approx.)	DCR⁴ (Ω) maximum @ 20°C	Volt-µsec⁵ (V-µs)
.52	52.9	63.75	.0006	6.87
.63	52.9	50.00	.0006	6.87
1.15	33.0	42.50	.0013	10.31
2.00	24.3	31.90	.0023	13.75
4.55	17.0	21.25	.0046	20.62
6.00	17.0	16.50	.0046	20.62
	.52 .63 1.15 2.00 4.55	.52 52.9 .63 52.9 1.15 33.0 2.00 24.3 4.55 17.0	.52 52.9 63.75 .63 52.9 50.00 1.15 33.0 42.50 2.00 24.3 31.90 4.55 17.0 21.25	.52 52.9 63.75 .0006 .63 52.9 50.00 .0006 1.15 33.0 42.50 .0013 2.00 24.3 31.90 .0023 4.55 17.0 21.25 .0046

4. Values @ 20°C

1. Open Circuit Inductance Test Parameters: 300kHz, 0.250 Vrms, 0.0 Adc

2. DC current for an approximate temperature change 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. Peak current for approximately 30% rolloff.

Dimensions-mm



RECOMMENDED PCB PAD LAYOUT





5. Applied Volt-Time product (V-µs) across the inductor. This value represents the applied V-µs at

300KHz neccessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

Packaging information (mm)

Supplied in tape and reel packaging, 130 parts per 13" reel.



HC2LP Low profile, high current power inductors

Core loss



Inductance Characteristics



Solder reflow profile



$-_{T_c - 5^{\circ}C}$ Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Reference JDEC J-STD-020D

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder	
Preheat and Soak • Temperature min. (T _{smin})	100°C	150°C	
• Temperature max. (T _{smax})	150°C	200°C	
• Time (T _{smin} to T _{smax}) (t _s)	60-120 Seconds	60-120 Seconds	
Average ramp up rate T _{smax} to T _p	3°C/ Second Max.	3°C/ Second Max.	
Liquidous temperature (TL) Time at liquidous (tL)	183°C 60-150 Seconds	217°C 60-150 Seconds	
Peak package body temperature (Tp)*	Table 1	Table 2	
Time $(t_p)^{**}$ within 5 °C of the specified classification temperature (T_c)	20 Seconds**	30 Seconds**	
Average ramp-down rate (T _p to T _{smax})	6°C/ Second Max.	6°C/ Second Max.	
Time 25°C to Peak Temperature	6 Minutes Max.	8 Minutes Max.	

* Tolerance for peak profile temperature (T_n) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

Eaton Electronics Division 1000 Eaton Boulevard Cleveland, OH 44122 United States www.eaton.com/elx

© 2015 Eaton All Rights Reserved Printed in USA Publication No. 4114 October 2015

Eaton is a registered trademark.

All other trademarks are property of their respective owners.



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Fixed Inductors category:

Click to view products by Eaton manufacturer:

Other Similar products are found below :

CR43NP-680KC CR54NP-820KC CR54NP-8R5MC CTX32CT-100 70F224AI MGDQ4-00004-P MHL1ECTTP18NJ MHL1JCTTD12NJ PE-51506NL PE-53601NL PE-53602NL PE-53630NL PE-53824SNLT PE-92100NL PG0434.801NLT PG0936.113NLT 9310-16 PM06-2N7 PM06-39NJ A01TK 1206CS-471XJ HC2-2R2TR HC2LP-R47-R HC3-2R2-R 1206CS-151XG RCH664NP-140L RCH664NP-4R7M RCH8011NP-221L RCP1317NP-332L RCP1317NP-391L RCR1010NP-470M RCR110DNP-331L DH2280-4R7M DS1608C-106 ASPI-4020HI-R10M-T B10TJ B82477P4333M B82498B3101J000 B82498B3680J000 ELJ-RE27NJF2 1812CS-153XJ 1812CS-183XJ 1812CS-223XJ 1812LS-104XJ 1812LS-105XJ 1812LS-124XJ 1812LS-154XJ 1812LS-223XJ 1812LS-224XJ 1812LS-563XJ