

### Description

- 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
- Current range from 78.0 to 33.8 Amps
- Inductance range from 0.50uH to 6.52uH
- Ferrite core material

# Applications

- Next generation microprocessors
- Energy storage applications
- DC-DC converters
- Computers

#### **Environmental Data**

- Storage temperature range: -40°C to +125°C
- Operating ambient temperature range: -40°C to +85°C
- Solder reflow temperature: +260°C max. for 10 seconds max.

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## Packaging

Supplied in bulk packaging, 24 parts per tray

Part Number	Rated Inductance µH	OCL (1) nominal +/-20% µH	Irms (2) Amperes (Typ.)	Isat (3) Amperes (Typ.)	DCR (mΩ) max. @ 20°C	Volts (4) µSec (VµS) (ref.)
HC3-R50-R	0.50	0.50	78.00	120	0.42	17.33
HC3-1R0-R	1.0	1.05	78.00	78	0.42	17.33
HC3-2R2-R	2.2	2.05	55.50	60	0.70	26.01
HC3-3R3-R	3.3	3.63	42.45	46	1.20	34.65
HC3-4R7-R	4.7	4.98	33.80	38	2.17	43.30
HC3-5R6-R	5.6	5.68	33.80	34.5	2.17	43.30
HC3-6R0-R	6.0	6.52	33.80	30.0	2.17	43.30

RoHS 2002/95/E

1) Test Parameters: 300kHz, 0.25 Vrms

2) DC current for approximately  $\Delta T$  of 40°C without core loss

De-rating is necessary for AC currents. PCB layout, trace thickness and width, air flow and proximity of other heat generating components will affect temperature rise. It is recommended that the temperature of the part not exceed 125°C under worst case conditions verified in the end application. 3) Peak current for approximately 30% rolloff (@20°C)

4) Applied Volt-Time product (V-μS) across the inductor. This value represents the applied V-µS at 300kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise

#### **Mechanical Diagrams**





wwllyy = Date code R = Revision level







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HC3-XXX-R

HC3 = 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



Part Number	Height max
HC3-R50-R	18.0
HC3-1R0-R	17.5
HC3-2R2-R	17.5
HC3-3R3-R	17.5
HC3-4R7-R	17.5
HC3-5R6-R	17.5
HC3-6R0-R	17.5

SCHEMATIC







### **Inductance Characteristics**





# Irms DERATING WITH CORE LOSS for HC3 % Applied Volt-u Seconds





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