

### 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.

### Packaging

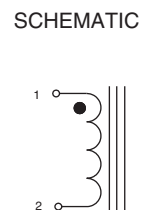
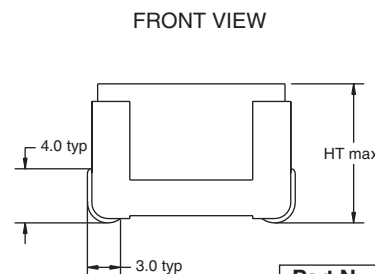
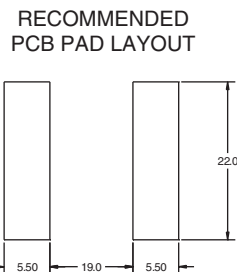
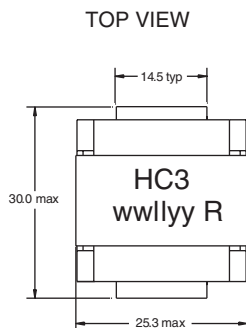
- Supplied in bulk packaging, 24 parts per tray

Part Number	Rated Inductance $\mu\text{H}$	OCL (1) nominal $\pm 20\% \mu\text{H}$	I <sub>rms</sub> (2) Amperes (Typ.)	I <sub>sat</sub> (3) Amperes (Typ.)	DCR (m $\Omega$ ) max. @ 20°C	Volts (4) $\mu\text{Sec}$ ( $\mu\text{S}$ ) (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

- 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- $\mu\text{S}$ ) across the inductor. This value represents the applied V- $\mu\text{S}$  at 300kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise.

Part number definition:  
 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

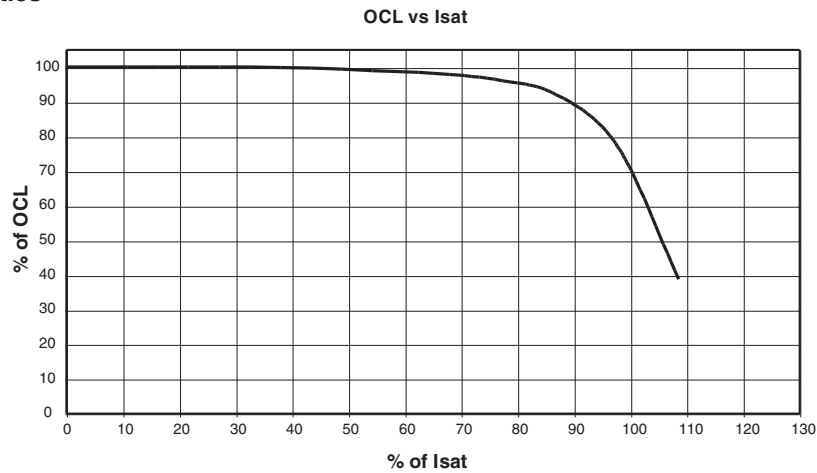
### Mechanical Diagrams



wwllyy = Date code R = Revision level

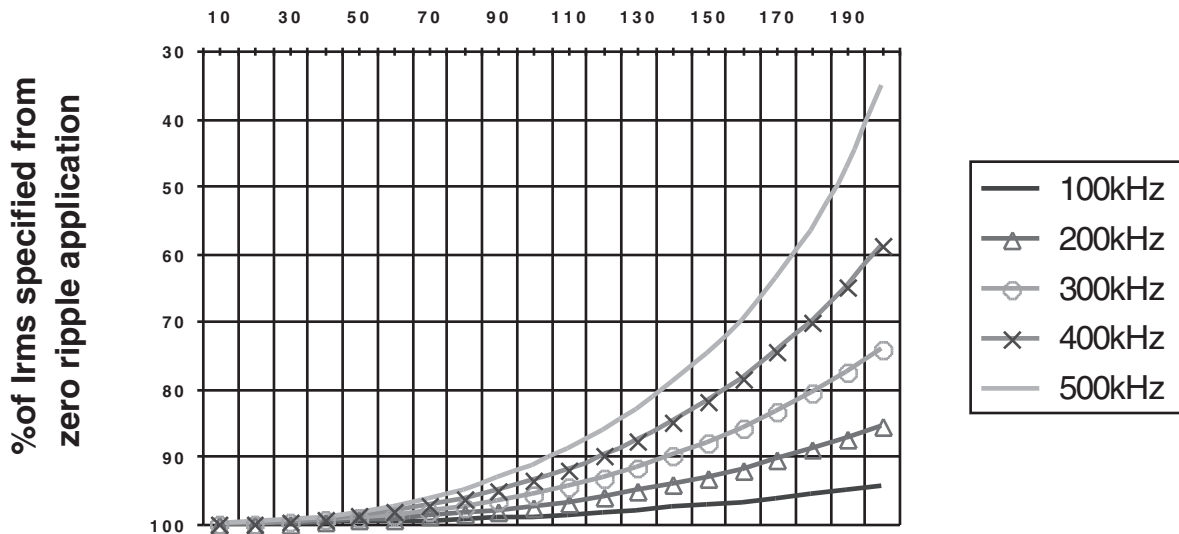
Part Number	Height max
HC3-R50-R	18.0
HC3-1R0-R	17.5
HC3-2R2-R	17.5
HC3-3R3-R	17.5
HC3-4R7-R	17.5
HC3-5R6-R	17.5
HC3-6R0-R	17.5

**Inductance Characteristics**



**Core Loss**

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



# Mouser Electronics

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[HC3-1R0-R](#)