



## HIGH CURRENT 2™ **Power Inductors**

#### **Description**

- Compact footprint 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

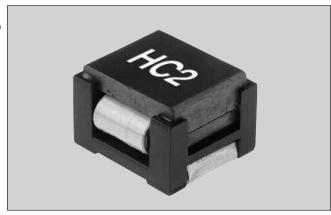
#### **Applications**

- 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 (range is application specific).
- Solder reflow temperature: +260°C for 10 seconds maximum





#### **Packaging**

- 45 parts per tray bulk packaging.
- Tape and reel packaging also available, 44mm width, 110 parts per 13" reel.
- Add -TR after part number for tape and reel packaging.

| Part<br>Number | Rated<br>Inductance<br>µH | OCL (1)<br>μH ± 20% | Irms (2)<br>Amperes<br>(Typ.) | Isat (3)<br>Amperes<br>(Typ.) | DCR (4)<br>Ohms<br>(Max.) | Volts (5)<br>µSec |
|----------------|---------------------------|---------------------|-------------------------------|-------------------------------|---------------------------|-------------------|
| HC2-R47-R      | .47                       | .52                 | 52.9                          | 63.75                         | .0006                     | 6.87              |
| HC2-R68-R      | .68                       | .63                 | 52.9                          | 50.00                         | .0006                     | 6.87              |
| HC2-1R0-R      | 1.0                       | 1.15                | 33.0                          | 42.50                         | .0013                     | 10.31             |
| HC2-2R2-R      | 2.2                       | 2.00                | 24.3                          | 31.90                         | .0023                     | 13.75             |
| HC2-4R7-R      | 4.7                       | 4.55                | 17.0                          | 21.25                         | .0046                     | 20.62             |
| HC2-6R0-R      | 6.0                       | 6.00                | 17.0                          | 16.50                         | .0046                     | 20.62             |

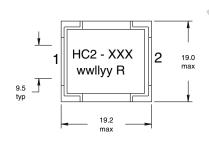
- 1) Open Circuit Inductance Test Parameters: 300kHz, 0.250 Vrms, 0.0 Adc
- 2) DC current for an approximate temperature change of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat

generating components will affect the temperature rise.

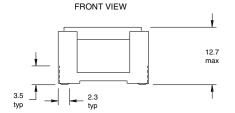
It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

- 3) Peak current for approximately 30% roll-off
- 4) Values @ 20°C
- 5) 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 40°C temperature rise.

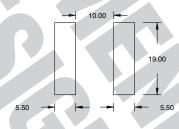
#### **Mechanical Diagrams**

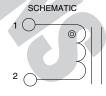


TOP VIEW



#### RECOMMENDED PCB PAD LAYOUT

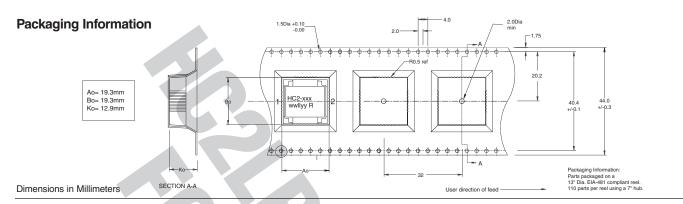




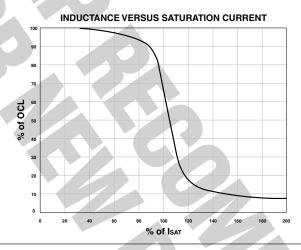




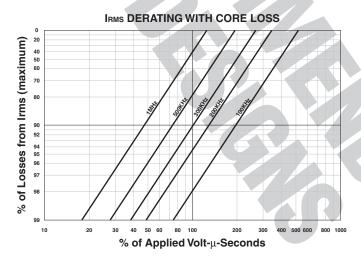
## HIGH CURRENT 2<sup>™</sup> Power Inductors



#### Rolloff



#### **Core Loss**





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