

Description

- 155°C maximum total temperature operation
- Surface mount inductors designed for higher speed switch mode applications requiring lower inductance, low voltage and high current
- Design utilizes high temperature powder iron material with a non-organic binder to eliminate thermal aging
- Inductance range from 0.22 uH to 4.81 uH
- Current range from 35.8 to 9.8 Amps
- Frequency range 1kHz to 500kHz



Applications

- Next generation microprocessors
- High current DC-DC converters
- VRM, multi-phase buck regulator
- PC, Workstations, Routers
- Telecom soft switches, Base Stations

Environmental Data

- Storage temperature range: -40°C to +155°C
- Operating ambient 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, 610 parts per reel

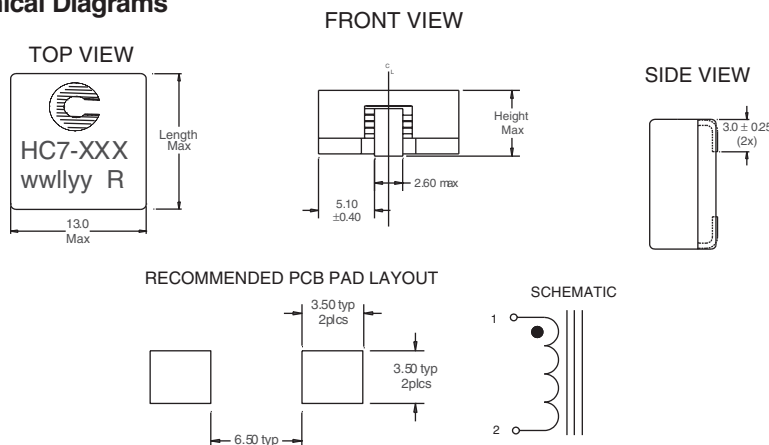
Part Number	Rated Inductance μH	OCL (1) nominal $\pm 20\%$ μH	I _{rms} (2) Amperes (Typ.)	Isat (3) Amperes 15% rolloff	Isat (4) Amperes 30% rolloff	DCR (m Ω) max. @ 20°C	Volts (5) μSec (V μS)
HC7-R20-R	.20	0.220	35.80	45.8	86.5	0.67	2.27
HC7-R47-R	.47	0.534	23.40	27.5	51.9	1.60	3.83
HC7-1R0-R	1.0	1.05	20.30	19.6	37.1	2.10	5.36
HC7-1R5-R	1.5	1.73	14.20	15.3	28.8	4.30	6.90
HC7-2R2-R	2.2	2.58	13.00	12.5	23.6	5.20	8.40
HC7-3R9-R	3.9	3.61	10.40	10.6	20.0	7.90	10.0
HC7-4R7-R	4.7	4.81	9.80	9.2	17.3	9.00	12.6

- 1) Test Parameters: 100KHz, 1.0Vrms
 - 2) I_{rms} Amperes for approximately ΔT of 40°C above 85°C ambient
 - 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 I_{rms} is required to prevent excessive temperature rise. The 100% V- μS rating is equivalent to a ripple current I_{p-p} of 20% of Isat (30% rolloff option).
- It is recommended that the temperature of the part not exceed 155°C under worst case operating conditions verified in the end application.

Units supplied in tape and reel packaging. 13" reels 610 parts per reel. Carrier tape width = 24 mm. Meets EIA standard

Part number definition:
 HC7-XXX-R
 HC7 = 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

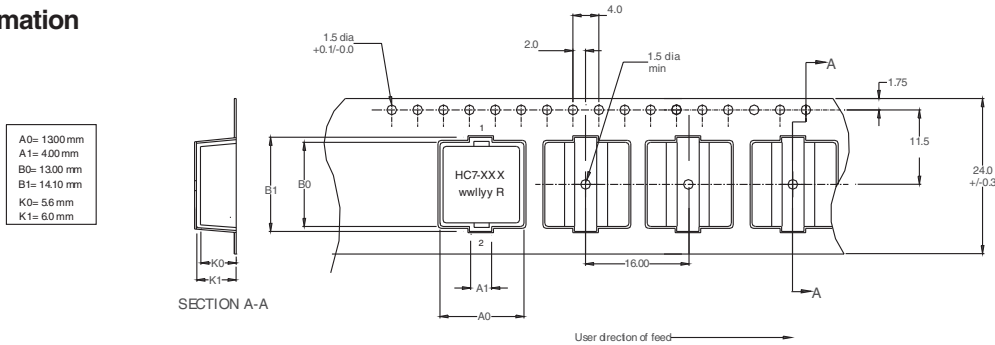


Maximum Dimension

Part Number	Height mm	Length mm
HC7-R20-R	6.0	14.25
HC7-R47-R	5.5	13.8
HC7-1R0-R	5.5	13.8
HC7-1R5-R	5.5	13.8
HC7-2R2-R	5.5	13.8
HC7-3R9-R	5.5	13.8
HC7-4R7-R	5.5	13.8

Dimensions in Millimeters.
 All dimensions I+/- 0.2 mm unless otherwise specified.
 All soldering surfaces are coplanar within 0.15 mm.

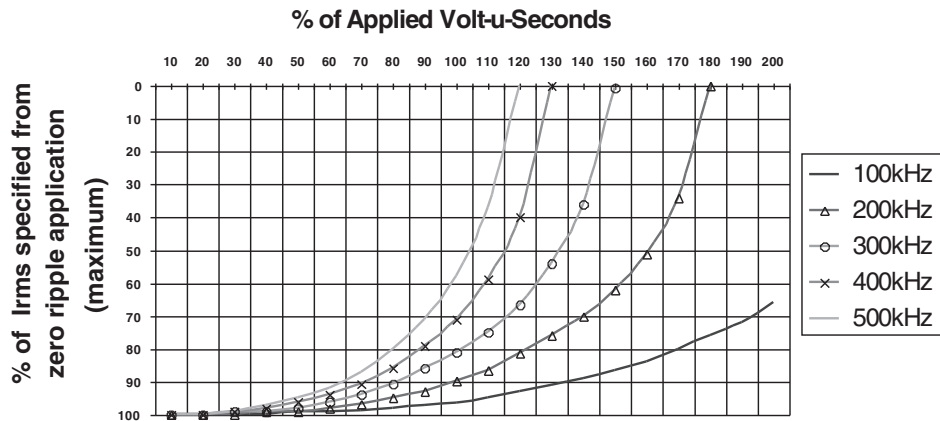
Packaging Information



Dimensions in Millimeters

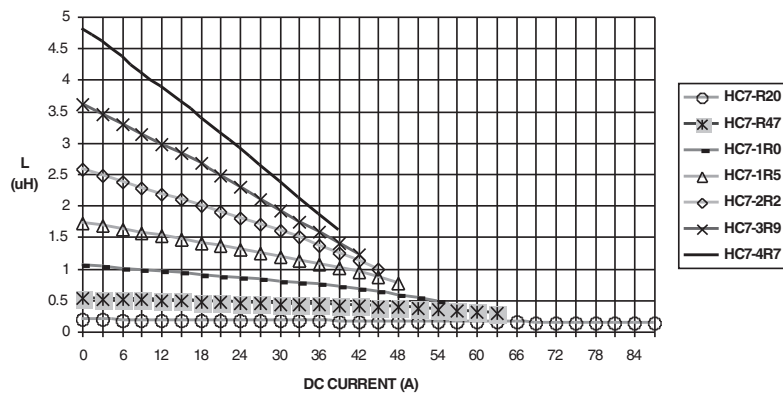
Core Loss

Irms DERATING WITH CORE LOSS



Inductance Characteristics

Inductance vs. Idc



Mouser Electronics

Authorized Distributor

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[HC7-R20-R](#) [HC7-R47-R](#) [HC7-1R0-R](#) [HC7-2R2-R](#) [HC7-4R7-R](#)