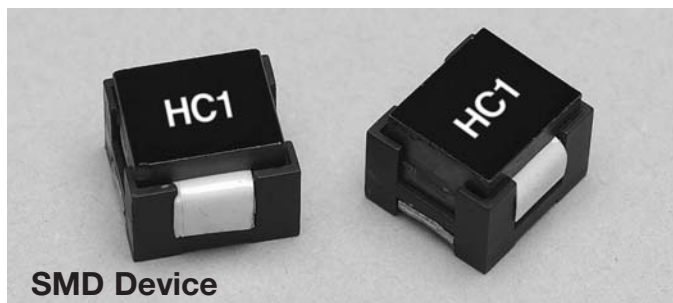


High Current Inductor

Single Winding, HC1



SMD Device

Description:

- 125°C Maximum total operating temperature
- Designed for high current, low voltage applications
- Low DCR, high efficiency
- Foil construction for higher frequency circuit designs
- Suited for IR and vapor reflow solder
- Frequency range 1kHz to 1MHz
- Ferrite core material

Applications

- Next generation microprocessors
- High current DC-DC converters
- Computers



Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (range is application specific).
- Solder reflow temperature: +260°C maximum for 10 seconds maximum.

Packaging

- Units supplied in tape and reel packaging, 250 parts on 13" diameter reel.

Product Specifications

Part Number	Rated Inductance μH	OCL ¹⁾ $\pm 15\% \mu\text{H}$	I_{rms} ²⁾ Amps (Approx.)	I_{sat} ³⁾ Amps (Approx.)	DCR (Ω) Max. @ 20°C	Volt- μSec ⁴⁾ (V μS) (ref.)
HC1-R22-R	0.22	0.218	51.42	40.5	0.00036	1.83
HC1-R30-R	0.30	0.291	51.42	31.8	0.00036	1.83
HC1-R57-R	0.57	0.572	37.83	33.4	0.00068	3.66
HC1-R87-R	0.87	0.866	28.01	31.0	0.00123	5.49
HC1-1R0-R	1.0	1.12	28.01	25.4	0.00123	5.49
HC1-1R7-R	1.7	1.66	22.30	22.2	0.0020	7.33
HC1-2R3-R	2.3	2.29	22.30	16.7	0.0020	7.33
HC1-3R6-R	3.6	3.59	16.76	13.4	0.0035	9.16
HC1-5R1-R	5.1	5.15	12.79	11.2	0.0057	10.99
HC1-7R8-R	7.8	7.85	12.79	6.7	0.0057	10.99
HC1-100-R	10	10.5	12.79	5.3	0.0057	10.99

1) OCL (Open Circuit Inductance) Test parameters: 300kHz, .25V_{rms}, 0.0Adc & I_{sat} .

2) I_{rms} Amps for approximately ΔT of 40°C. DC current for an approximate ΔT of 40°C without core loss. Derating is necessary for AC currents. It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

3) I_{sat} Amps Peak for approximately 30% rolloff @ 20°C

4) Applied Volt-Time product (V- μS) across the inductor. This value represents the applied V- μS at 200kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise. See Core Loss Graph.

5) Part number definition - HC1-xxx-R:

- HC1 = Product code and size
- -xxx = Inductance value
- R = Decimal point (if no "R" is present, third character = number of zeros)
- -R Suffix = RoHS compliant

Dimensions - mm

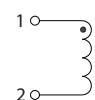
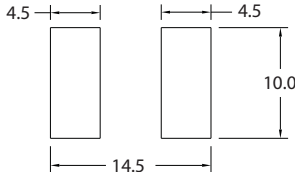
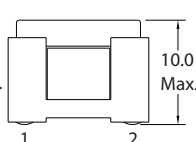
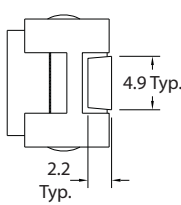
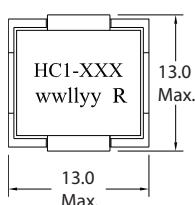
Top View

Side View

Front View

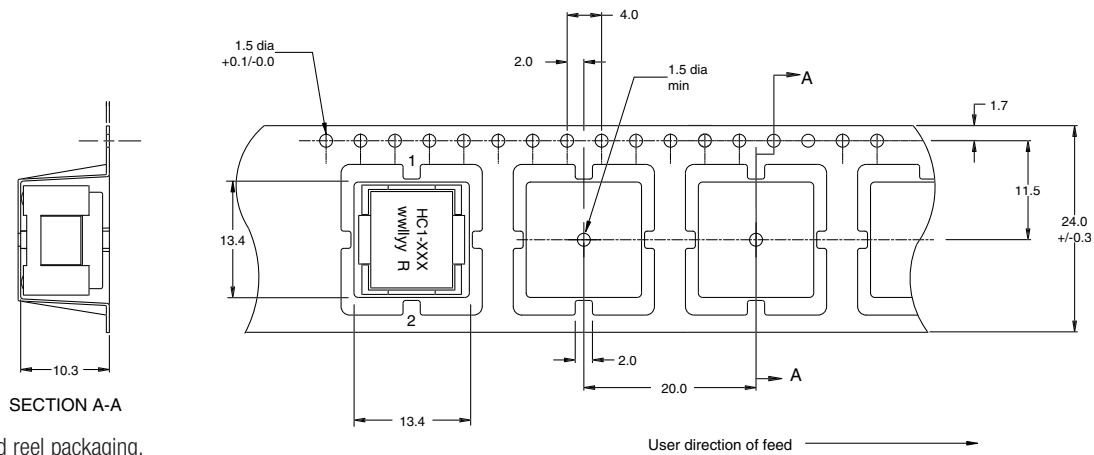
Recommended Pad Layout
(Component Side)

Schematic



xxx = Inductance value
wwlllyy = Date code R = Revision level

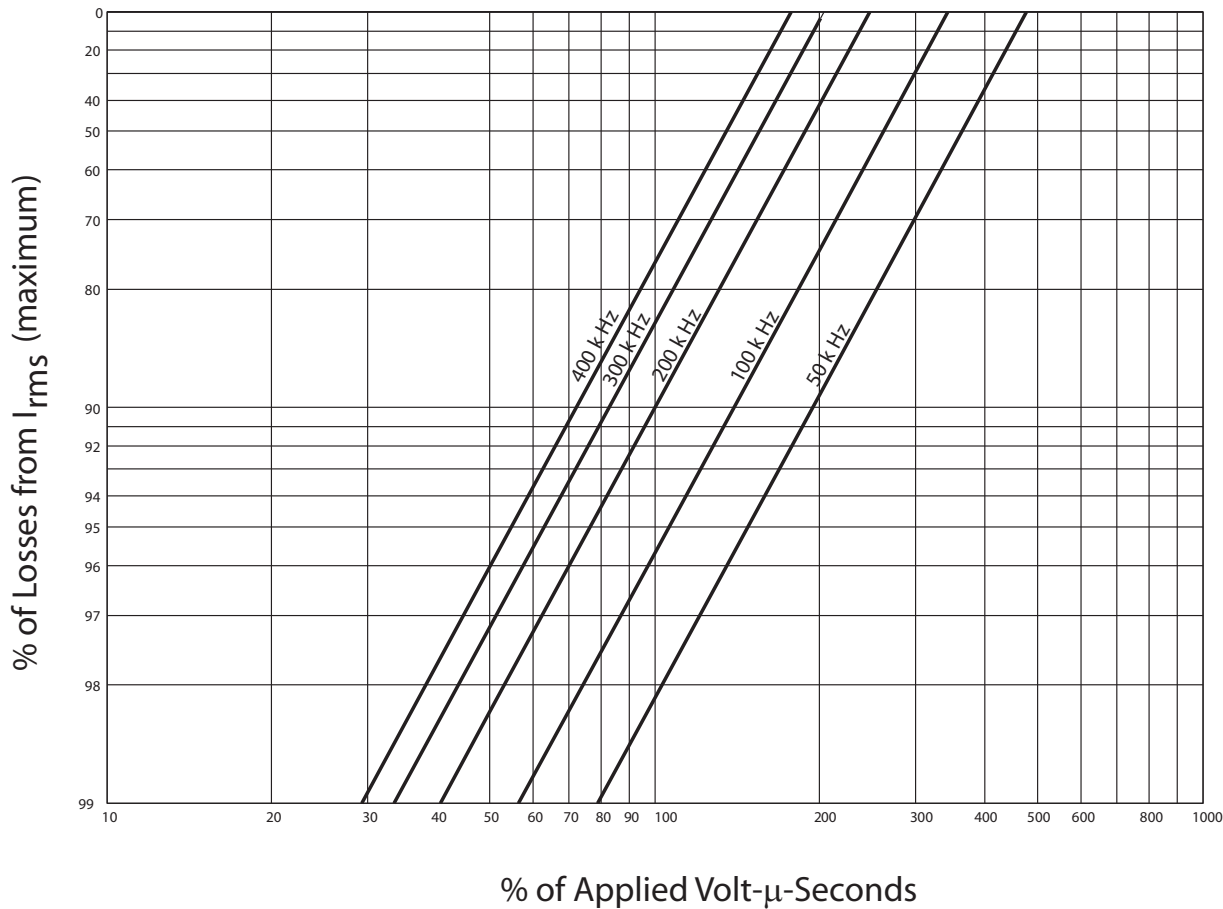
Packaging Information - mm



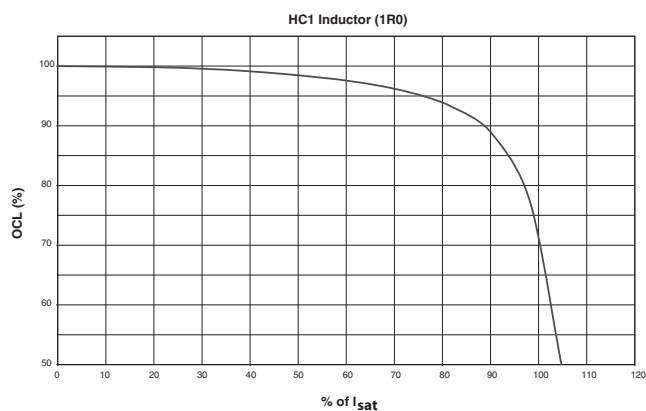
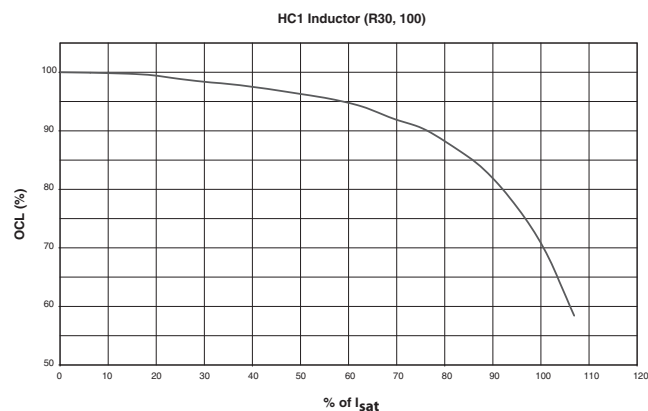
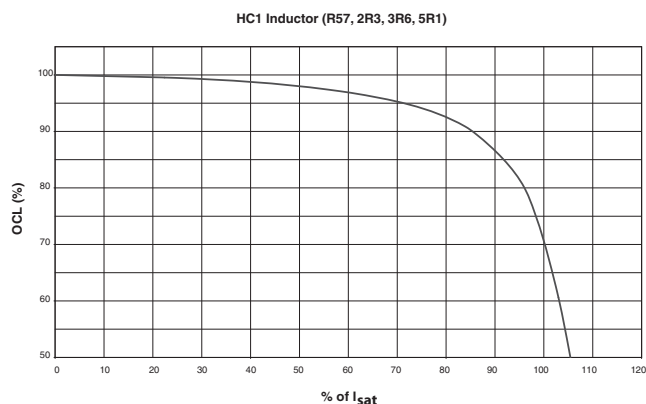
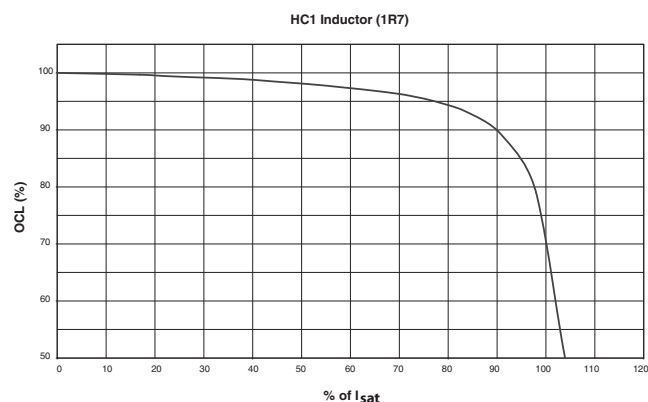
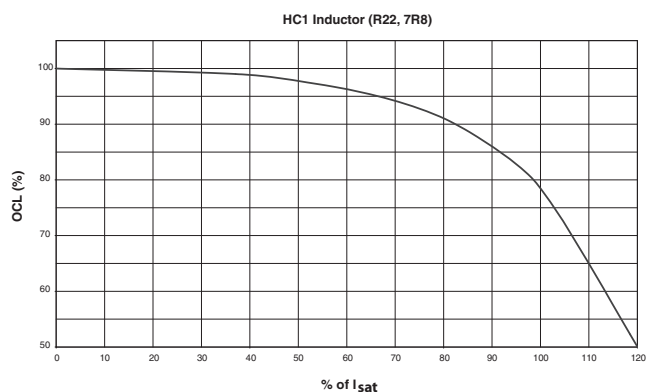
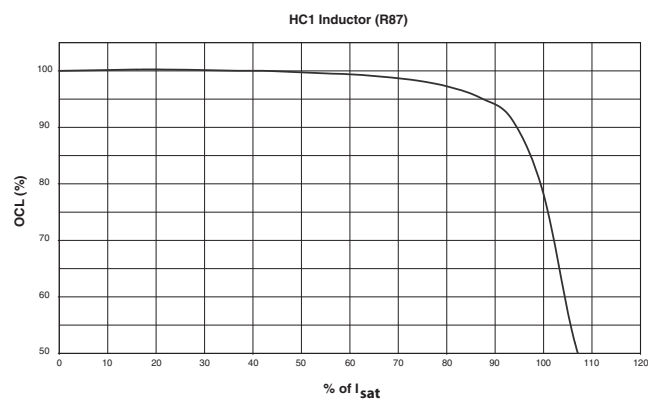
Supplied in tape and reel packaging,
250 parts per reel, 13" diameter reel.

Core Loss

I_{rms} Derating With Core Loss



Inductance Characteristics



North America

Cooper Electronic Technologies
1225 Broken Sound Parkway NW
Suite F
Boca Raton, FL 33487-3533
Tel: 1-561-998-4100
Fax: 1-561-241-6640
Toll Free: 1-888-414-2645

Cooper Bussmann
P.O. Box 14460
St. Louis, MO 63178-4460
Tel: 1-636-394-2877
Fax: 1-636-527-1607

Europe

Cooper Electronic Technologies
Cooper (UK) Limited
Burton-on-the-Wolds
Leicestershire • LE12 5TH UK
Tel: +44 (0) 1509 882 737
Fax: +44 (0) 1509 882 786

Cooper Electronic Technologies
Avda. Santa Eulalia, 290
08223
Terrassa, (Barcelona), Spain
Tel: +34 937 362 812
+34 937 362 813
Fax: +34 937 362 719

Asia Pacific

Cooper Electronic Technologies
1 Jalan Kilang Timor
#06-01 Pacific Tech Centre
Singapore 159303
Tel: +65 278 6151
Fax: +65 270 4160

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St. Louis, MO 63178
www.cooperbussmann.com

