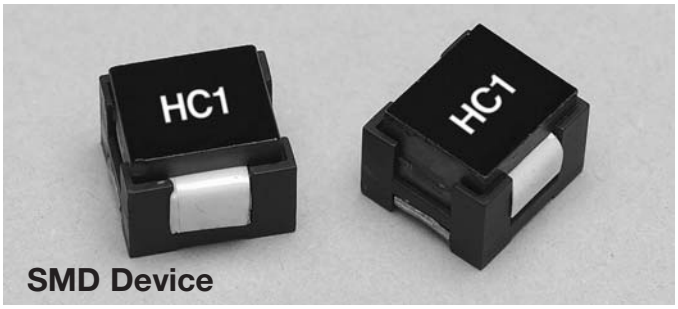
High Current Inductor

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

RoHS 2002/95/EC

- 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] ± 15% µH	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}.

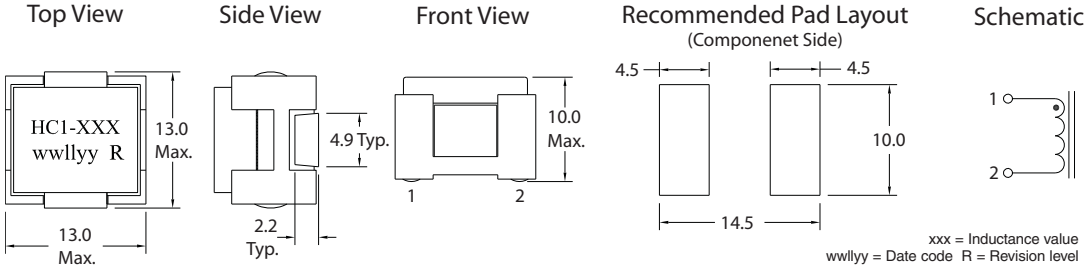
2) I_{rms} Amps for approximately ΔT of 40°C. DC current for an approximate ΔT of 40°C without core loss. Derating is necessary for AC currents. It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

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

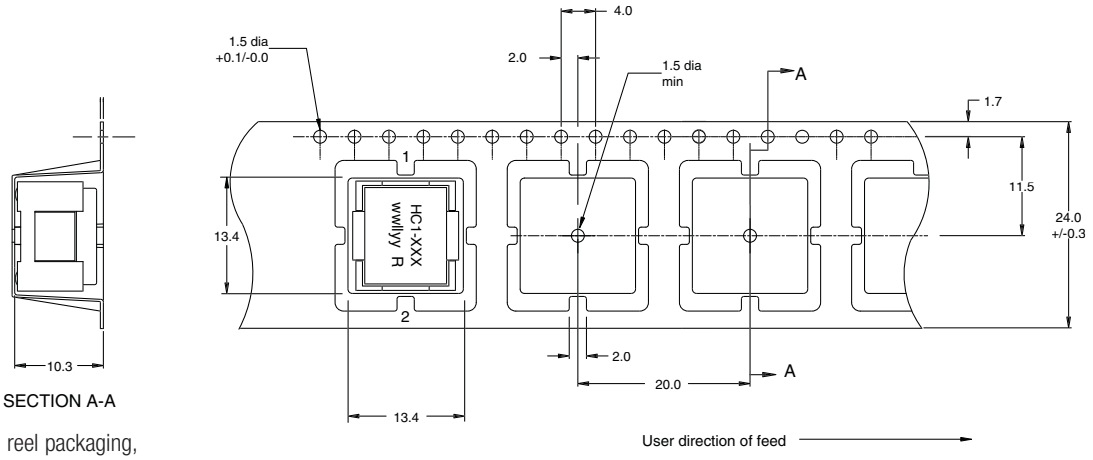
4) Applied Volt-Time product (V-µS) across the inductor. This value represents the applied V-µS at 200kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise. See Core Loss Graph.

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

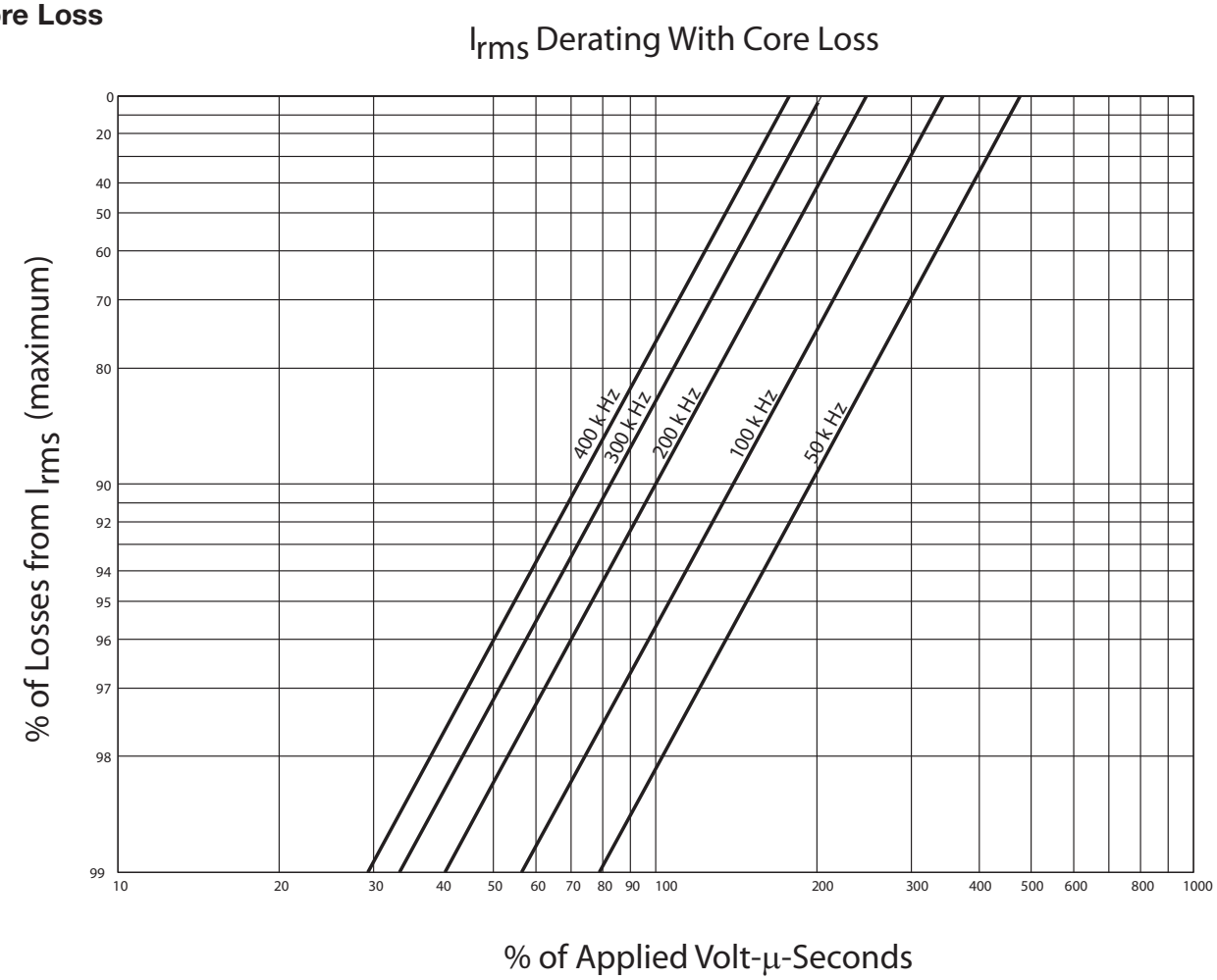


Packaging Information - mm



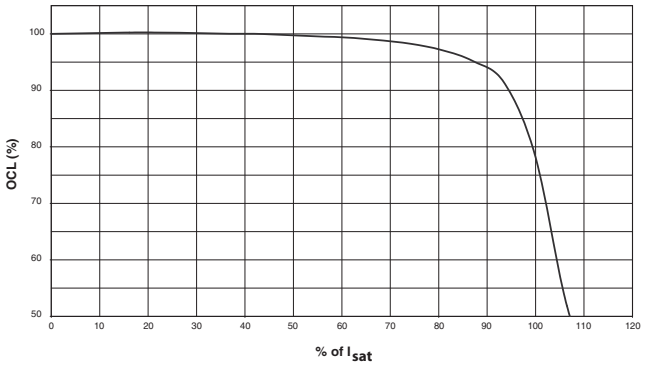
Supplied in tape and reel packaging,
250 parts per reel, 13" diameter reel.

Core Loss

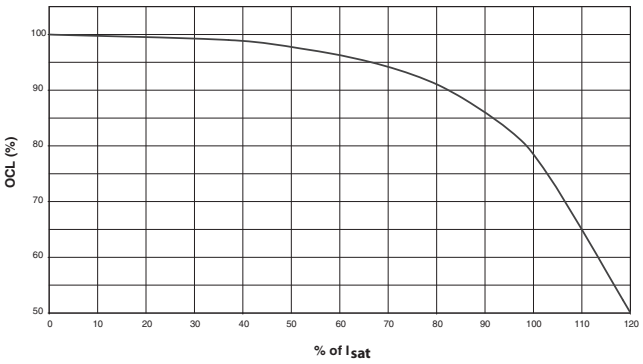


Inductance Characteristics

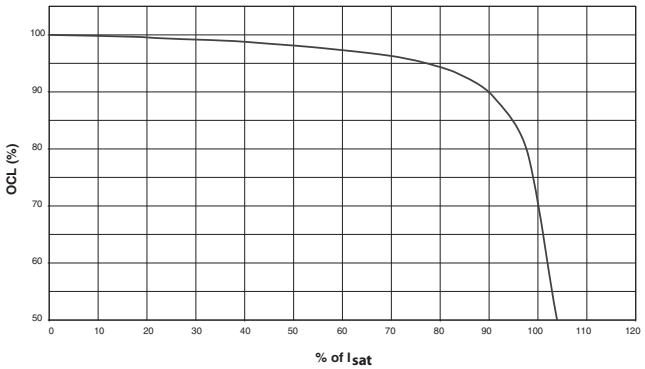
HC1 Inductor (R87)



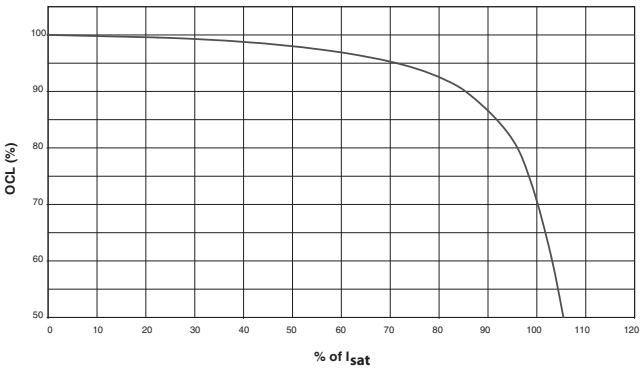
HC1 Inductor (R22, 7R8)



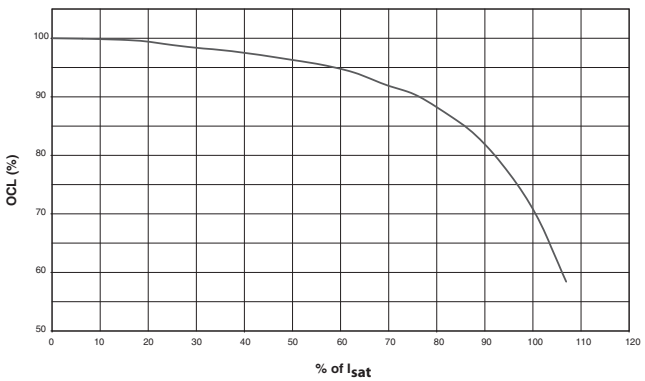
HC1 Inductor (1R7)



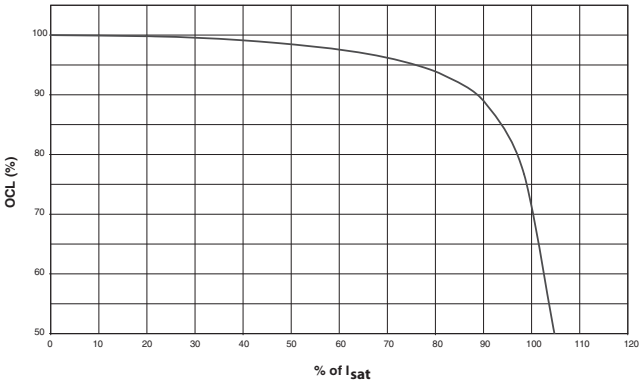
HC1 Inductor (R57, 2R3, 3R6, 5R1)



HC1 Inductor (R30, 100)



HC1 Inductor (1R0)



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