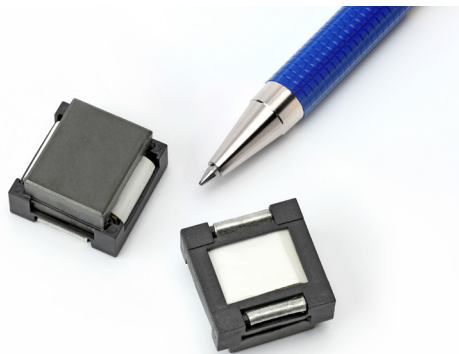


# HC2LP

## Low profile, high current power inductors



### Product description

- Compact footprint
- Designed 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
- Ferrite core material

### Applications

- Distributed power systems DC-DC converters
- General-purpose low voltage supplies
- Computer systems
- Servers
- Point of Load (POL) converters
- Industrial Equipment
- Networking/Telecom power supplies

### Environmental data

- Storage temperature range (component): -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient + self-temperature rise).
- Solder reflow temperature: J-STD-020D compliant.

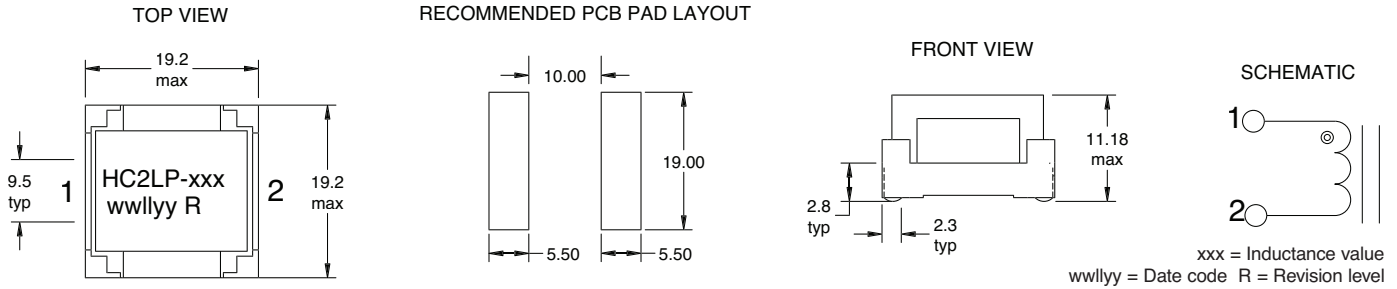


## Product specifications

Part number	OCL <sup>1</sup> (μH) ±20%	I <sub>rms</sub> <sup>2</sup> amps (approx.)	I <sub>sat</sub> <sup>3</sup> amps (approx.)	DCR <sup>4</sup> (Ω) maximum @ 20°C	Volt-μsec <sup>5</sup> (V-μs)
HC2LP-R47-R	.52	52.9	63.75	.0006	6.87
HC2LP-R68-R	.63	52.9	50.00	.0006	6.87
HC2LP-1R0-R	1.15	33.0	42.50	.0013	10.31
HC2LP-2R2-R	2.00	24.3	31.90	.0023	13.75
HC2LP-4R7-R	4.55	17.0	21.25	.0046	20.62
HC2LP-6R0-R	6.00	17.0	16.50	.0046	20.62

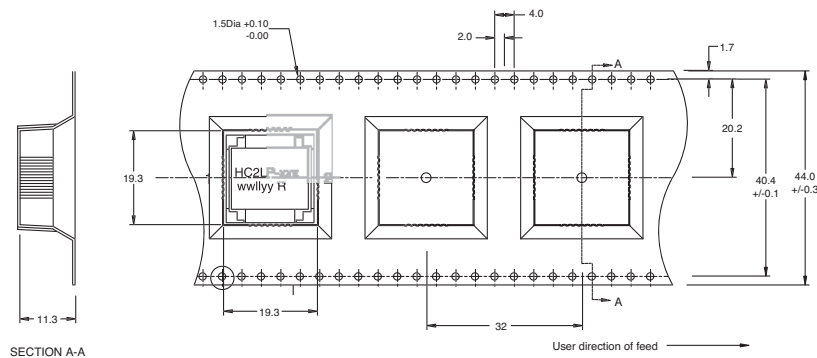
1. Open Circuit Inductance Test Parameters: 300kHz, 0.250 Vrms, 0.0 Adc
2. DC current for an approximate temperature change of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the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

## Dimensions—mm

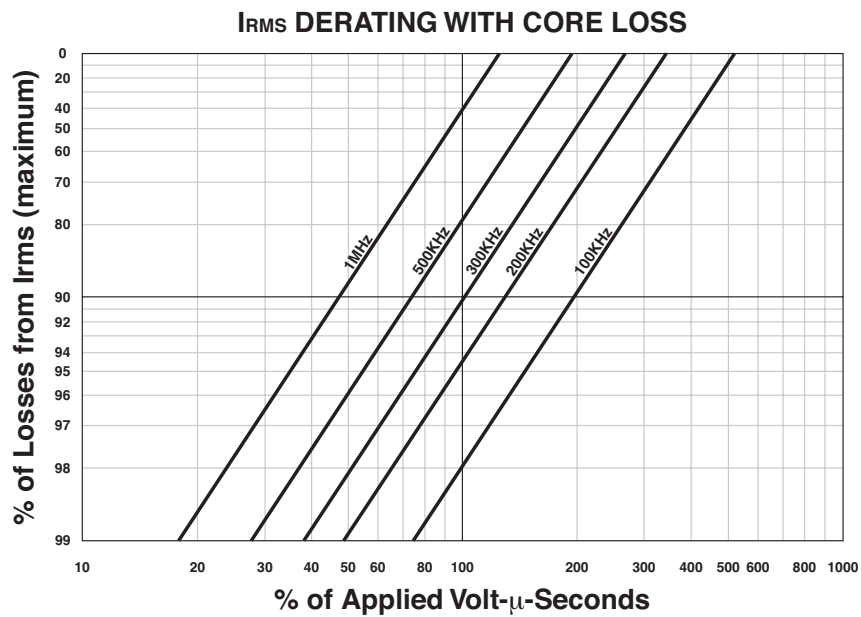


## Packaging information (mm)

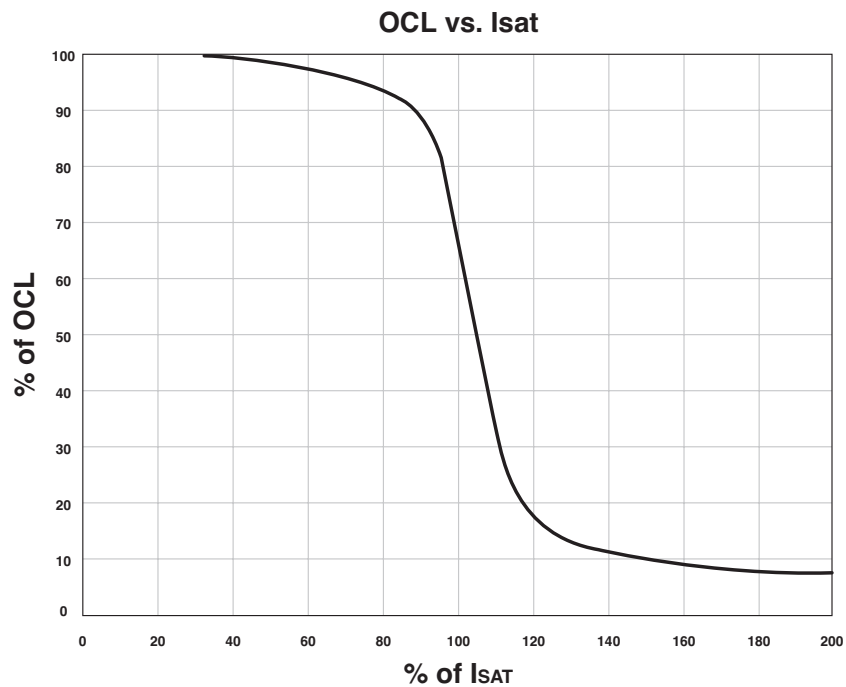
Supplied in tape and reel packaging, 130 parts per 13" reel.



## Core loss



## Inductance Characteristics



## Solder reflow profile

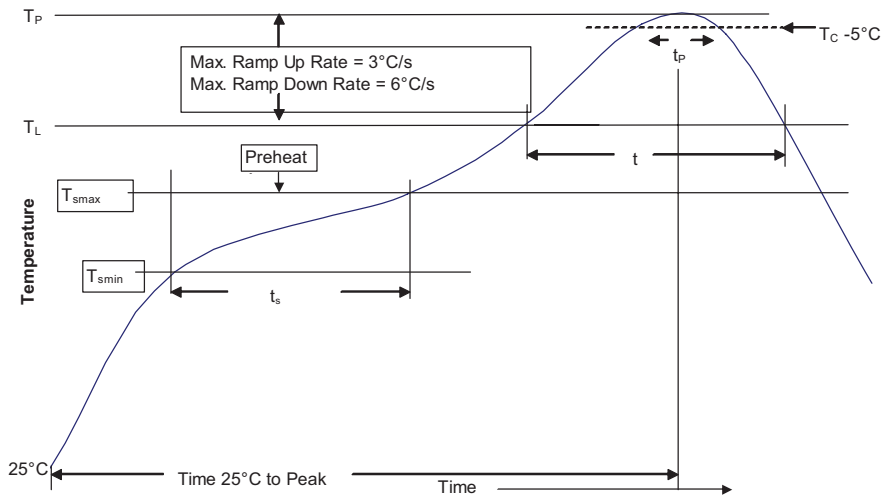


Table 1 - Standard SnPb Solder ( $T_C$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder ( $T_C$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

## Reference JEDEC J-STD-020D

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak		
• Temperature min. ( $T_{smin}$ )	100°C	150°C
• Temperature max. ( $T_{smax}$ )	150°C	200°C
• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60-120 Seconds	60-120 Seconds
Average ramp up rate $T_{smax}$ to $T_P$	3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60-150 Seconds	60-150 Seconds
Peak package body temperature ( $T_P$ )*	Table 1	Table 2
Time ( $t_p$ )** within 5 °C of the specified classification temperature ( $T_C$ )	20 Seconds**	30 Seconds**
Average ramp-down rate ( $T_P$ to $T_{smax}$ )	6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature	6 Minutes Max.	8 Minutes Max.

\* Tolerance for peak profile temperature ( $T_P$ ) is defined as a supplier minimum and a user maximum.

\*\* Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

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