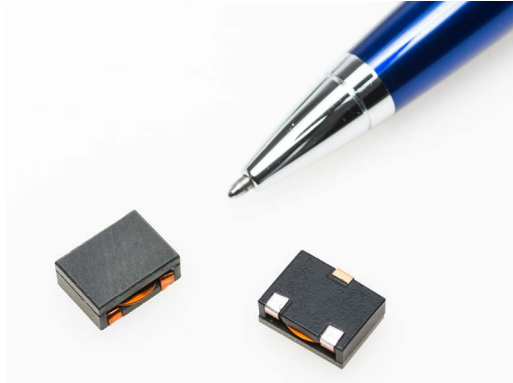


HCV1206

High current power inductors



Product features

- Flat-wire construction
- Low DCR, high efficiency
- Secure 3 terminal mounting
- 12.7 mm x 10.15 mm footprint surface mount package in a 5.1 mm height
- Ferrite core material

Applications

- Compatible with Picor® Cool-Power® ZVS Buck and Buck-Boost Regulator Families (Picor part number series PI37xx and PI35xx)

Environmental data

- Storage temperature range (component): -55 °C to +125 °C
- Operating temperature range: -55 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant



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Product Specifications

| Part Number ⁴ | OCL ¹ (μ H) $\pm 10\%$ | I_{rms}^2 (A) | I_{sat}^3 (A) | DCR (m Ω) @ +20 °C $\pm 10\%$ |
|--------------------------|---|--------------------|--------------------|---|
| HCV1206-R42-R | 0.42 | 16 | 42 | 3.15 |
| HCV1206-R48-R | 0.48 | 16 | 37 | 3.15 |
| HCV1206-R90-R | 0.90 | 14 | 28 | 4.6 |
| HCV1206-1R0-R | 1.0 | 14 | 24.5 | 4.6 |
| HCV1206-1R5-R | 1.5 | 12 | 21 | 6.0 |
| HCV1206-2R0-R | 2.0 | 12 | 16 | 6.0 |
| HCV1206-3R0-R | 3.0 | 11 | 13 | 7.4 |

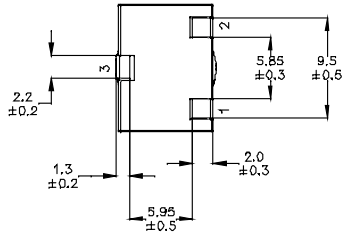
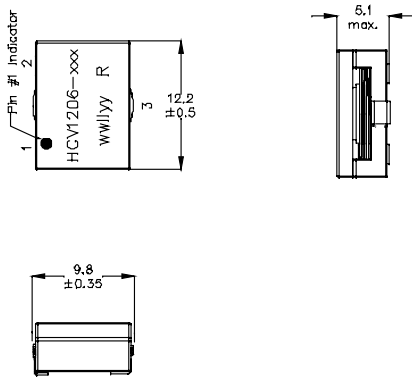
1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 Vrms, 0.0 Adc, +25 °C

2. I_{rms} : DC current for an approximate temperature rise 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.

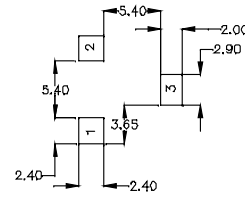
3. I_{sat} : Peak current for approximately 5% rolloff @ +25 °C

4. Part Number Definition: HCV1206-xxx-R
HCV1206 = Product code and size
xxx=Inductance value in μ H,
-R suffix = RoHS compliant

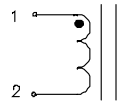
Dimensions- mm



Recommended Pad Layout



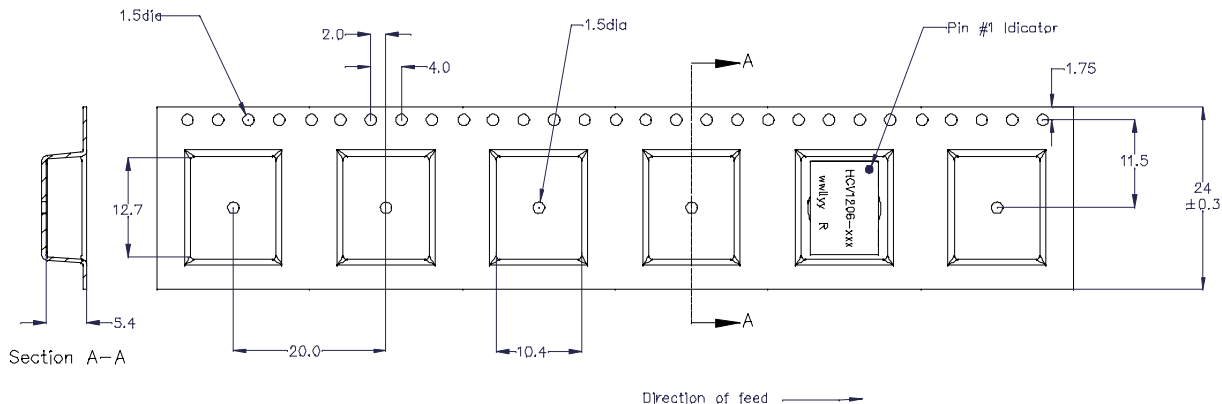
Schematic



Part marking: HCV1206-xxx, xxx=inductance value in μ H, R=decimal point, wwlllyy= date code, R=revision level
Soldering surfaces to be coplanar within 0.1 millimeters
Pin 3 is for mounting stability. No connection.
Do not route traces or vias underneath the inductor.

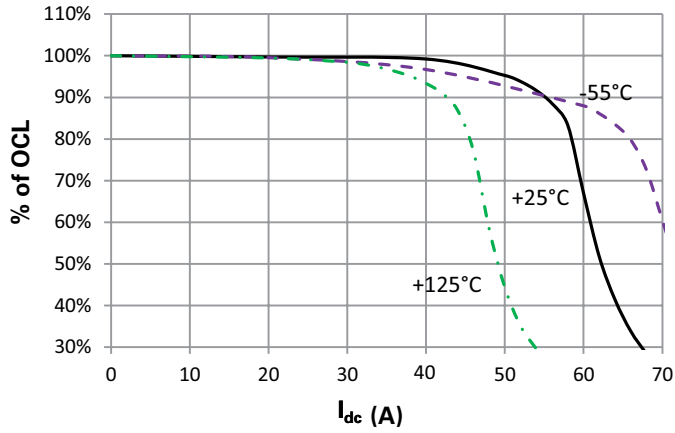
Packaging information- mm

Supplied in tape and reel packaging, 550 parts per 13" diameter reel

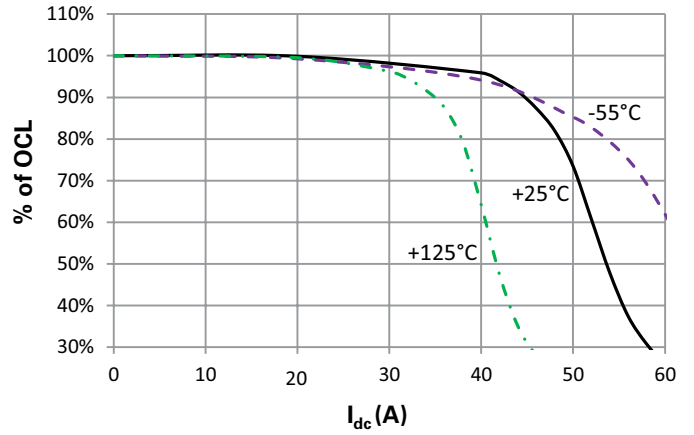


Inductance characteristics

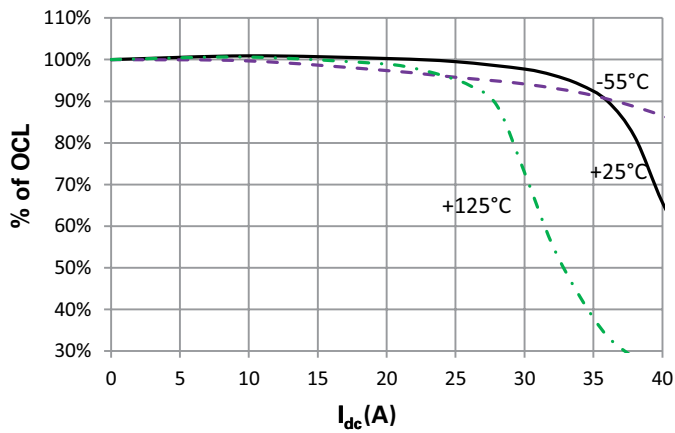
HCV1206-R42-R



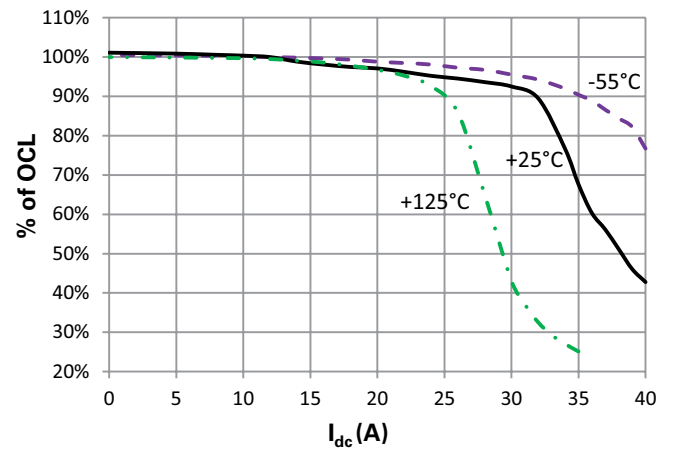
HCV1206-R48-R



HCV1206-R90-R

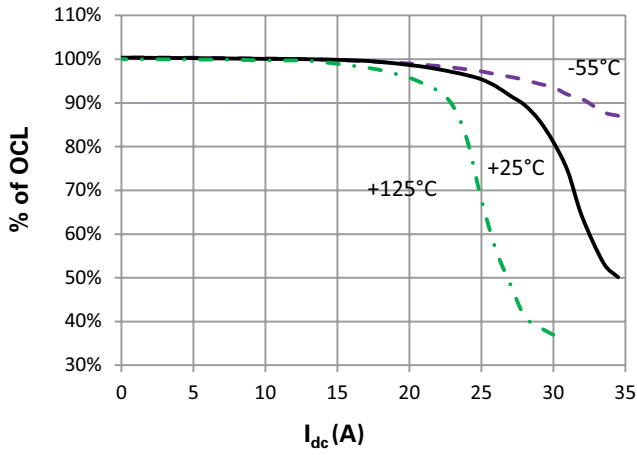


HCV1206-1R0-R

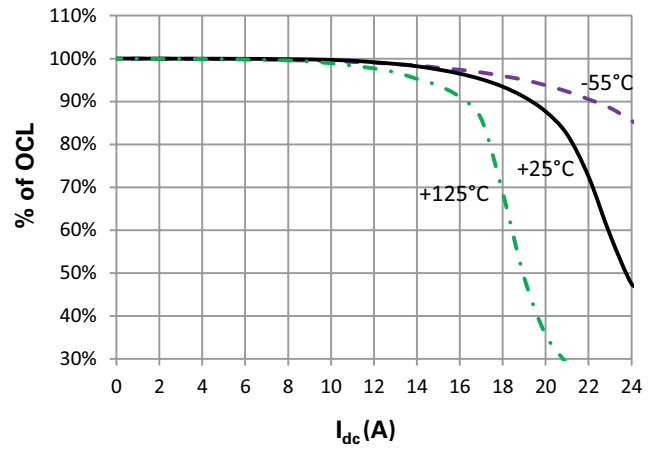


Inductance characteristics

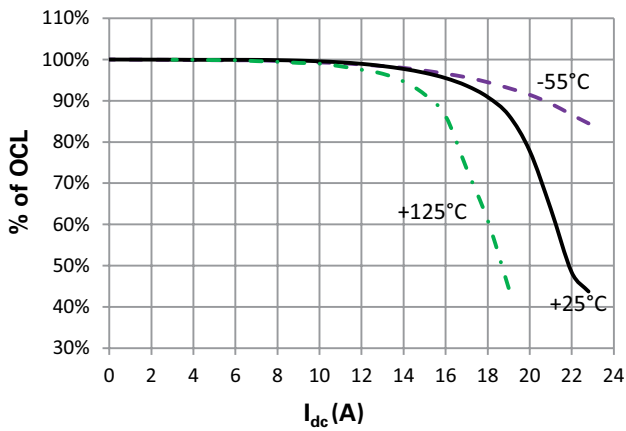
HCV1206-1R5-R



HCV1206-2R0-R



HCV1206-3R0-R



Solder reflow profile

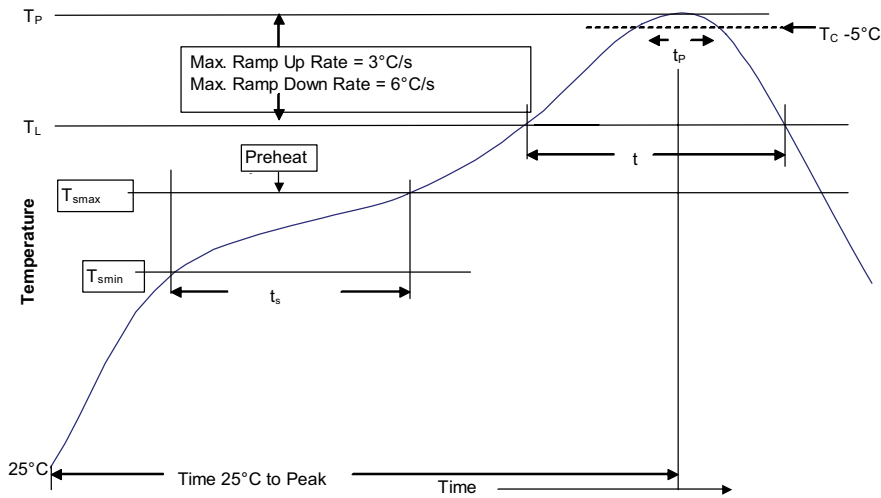


Table 1 - Standard SnPb Solder (T_C)

| Package Thickness | Volume mm ³ <350 | Volume mm ³ ≥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 ³ <350 | Volume mm ³ 350 - 2000 | Volume mm ³ >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 JDEC J-STD-020

| 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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[HCV1206-R48-R](#)