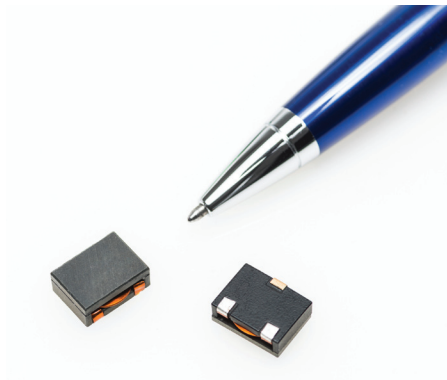


# Coiltronics HCV1206 Series

## High current power inductors



### Product description

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

### Applications

- Compatible with Picor® Cool-Power® ZVS Buck and Buck-Boost Regulator Families (Picor part number Series P137xx and P135xx)

### Environmental data

- Storage temperature range (Component): -55°C to +125°C
- Operating temperature range: -55°C to +125°C (ambient + self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant



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Powering Business Worldwide



The Coiltronics brand of magnetics (formerly of the Bussmann Division of Cooper Industries) is now part of Eaton's Electrical Group, Electronics Division.

**Coiltronics is now part of Eaton**  
**Same great products plus even more.**

**Product specifications**

| Part Number <sup>4</sup> | OCL <sup>1</sup> (μH) | I <sub>rms</sub> <sup>2</sup> (amps) | I <sub>sat</sub> <sup>3</sup> (amps) | DCR (mΩ ±10%) @ 20°C |
|--------------------------|-----------------------|--------------------------------------|--------------------------------------|----------------------|
| HCV1206-1R0-R            | 1.0                   | 14.0                                 | 24.5                                 | 4.6                  |
| HCV1206-1R5-R            | 1.5                   | 12.0                                 | 21.0                                 | 6.0                  |
| HCV1206-2R0-R            | 2.0                   | 12.0                                 | 16.0                                 | 6.0                  |
| HCV1206-3R0-R            | 3.0                   | 11.0                                 | 13.0                                 | 7.4                  |

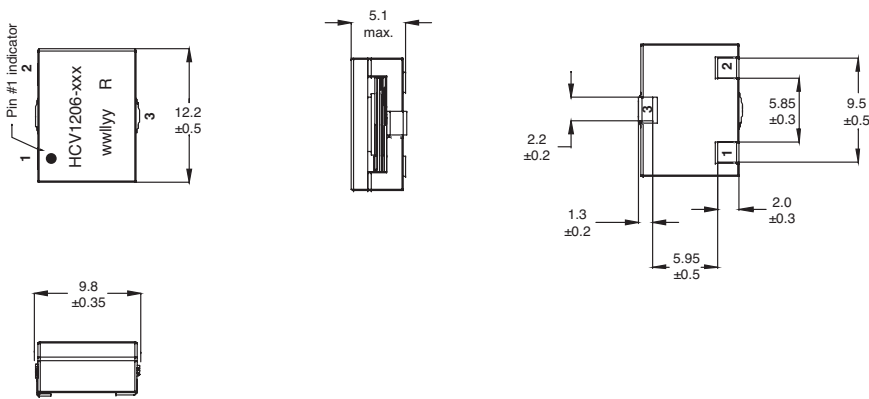
- Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1V<sub>rms</sub>, 0.0Adc, 25°C ±10%
- I<sub>rms</sub><sup>2</sup>: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity 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<sub>sat</sub><sup>3</sup>: Peak current for approximately 5% rolloff at +25°C

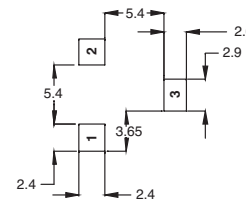
- Part Number Definition: HCV1206-xxx-R
  - HCV1206 = Product code and size
  - xxx = inductance value in μH, R= decimal point
  - "-R" suffix = RoHS compliant

**Note:** Hipot: 300Vdc minimum for 1 second, 0.1mA pins (1-2) to core

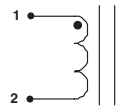
**Dimensions - mm**



**Recommended Pad Layout**

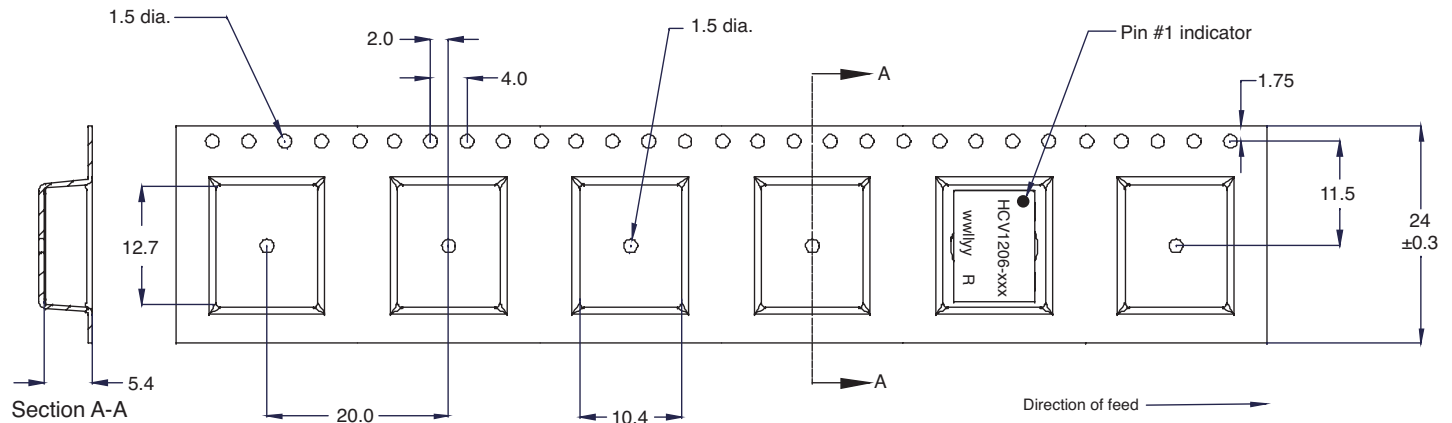


**Schematic**



Part marking: HCV1206-xxx, xxx = inductance value in μH, R = decimal point  
 wwllyy = date code, R = revision level  
 Soldering surfaces to be coplanar within 0.1 millimeters.  
 Pin #3 is for mounting stability - no connection.  
 Routing traces or vias underneath the inductor is not recommended.

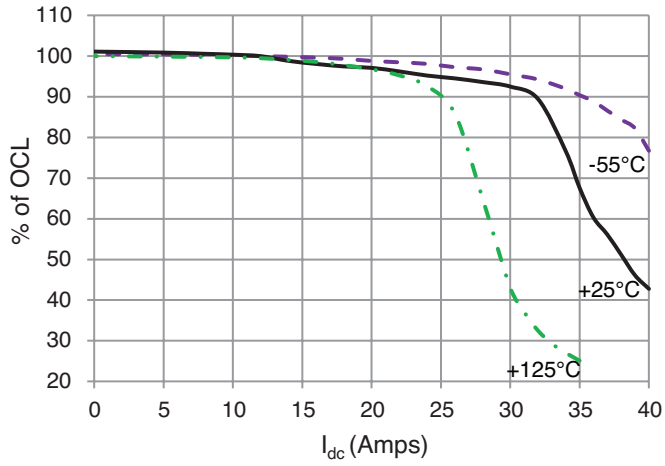
**Packaging information - mm**



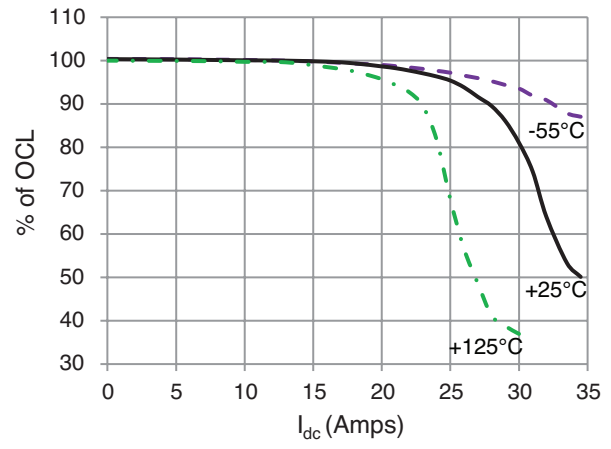
Supplied in tape and reel packaging, 550 parts per 13" diameter reel.

Inductance characteristics

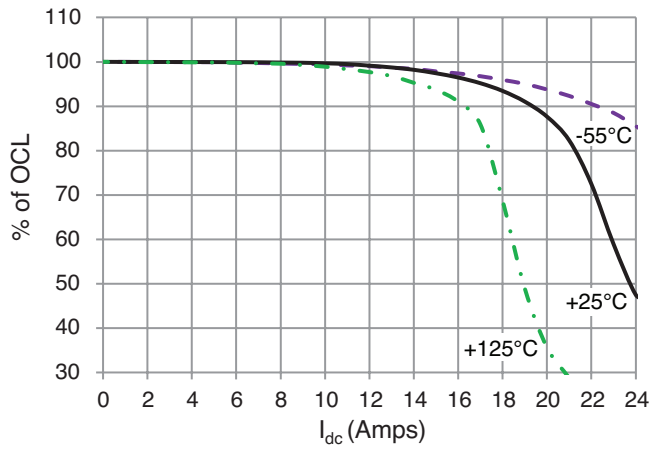
HCV1206-1R0-R



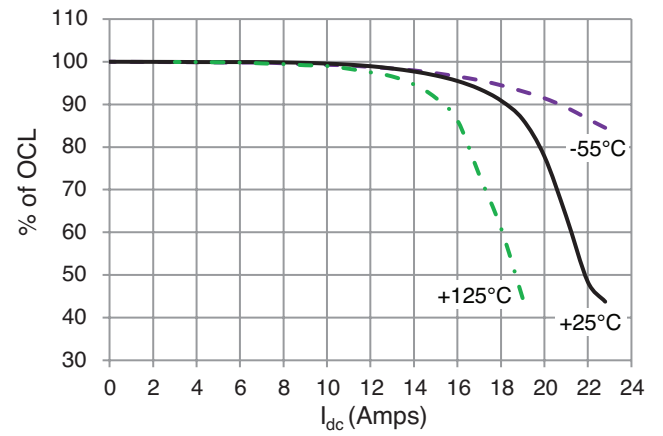
HCV1206-1R5-R



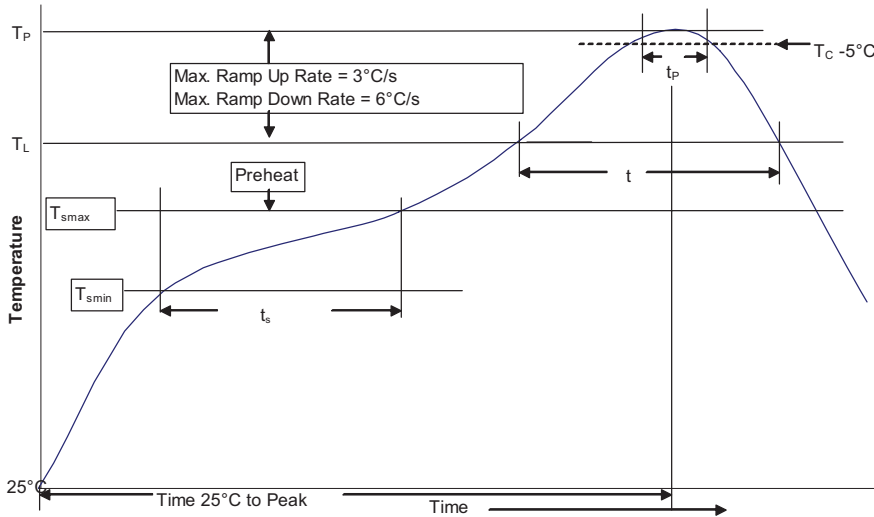
HCV1206-2R0-R



HCV1206-3R0-R



**Solder reflow profile**



**Table 1 - Standard SnPb Solder ( $T_C$ )**

| Package Thickness | Volume $<350$ mm <sup>3</sup> | Volume $\geq 350$ mm <sup>3</sup> |
|-------------------|-------------------------------|-----------------------------------|
| $<2.5$ mm         | 235°C                         | 220°C                             |
| $\geq 2.5$ mm     | 220°C                         | 220°C                             |

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

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

**Reference JDEC 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.

**North America**

Eaton's Electrical Group  
Electronics Division  
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

Eaton's Electrical Group  
Electronics Division  
P.O. Box 14460  
St. Louis, MO 63178-4460  
Tel: 1-636-394-2877  
Fax: 1-636-527-1607

**Europe**

Eaton's Electrical Group  
Electronics Division  
Burton-on-the-Wolds  
Leicestershire, LE 12 5th UK  
Phone: +44 (0) 1509 882 600  
Fax: +44 (0) 1509 882 786

Eaton's Electrical Group  
Electronics Division  
Avda Santa Eulalia, 290  
Terrassa, Barcelona 08223 Spain  
Phone: +34-93-736-2813  
Fax: +34-93-783-5055

**Asia Pacific**

Eaton's Electrical Group  
Electronics Division  
No.2, #06-01  
Serangoon North Avenue 5  
Singapore 554911  
Tel: +65 6645 9888  
Fax: +65 6728 3155

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**Eaton's Electrical Group  
Electronics Division**  
114 Old State Road  
Ellisville, MO 63021  
United States  
www.eaton.com/elx

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