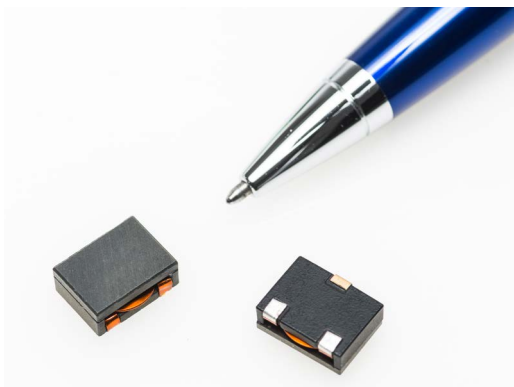


HCV1206

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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Part Number ⁴	OCL ¹ (μH) ±10%	I _{rms} ² (A)	I _{sat} ³ (A)	DCR (mΩ) @ +20 °C ±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

-R suffix = RoHS compliant

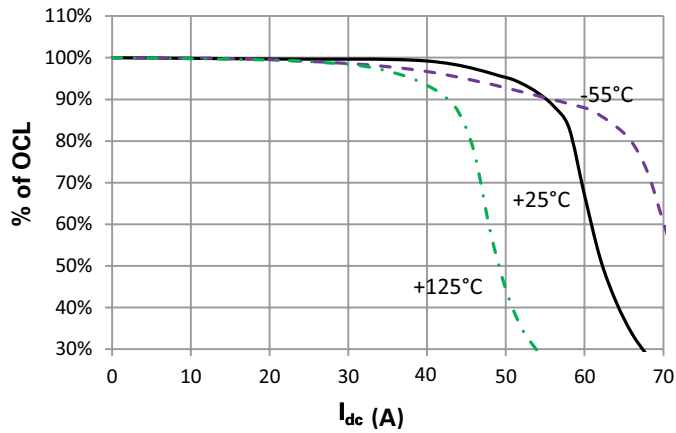
Figure 1 shows the dimensions of the HC1206-xxx package. The top view indicates a width of 9.8 ± 0.35 mm and a height of 12.2 ± 0.5 mm. The front view indicates a maximum height of 5.1 mm. The package is labeled 'HC1206-xxx' and 'willy R'. A pin #1 indicator is shown on the top left corner.

Do not route traces or vias underneath the inductor.

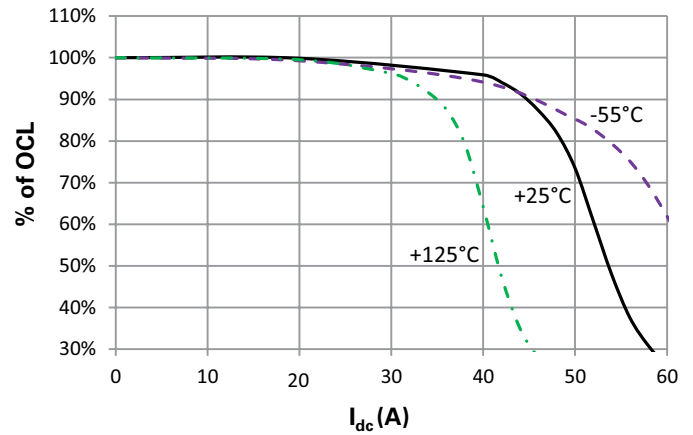
Technical drawing of a rectangular plate with six square features and a central label. The drawing includes dimensions for hole diameters (1.5dia), hole spacing (2.0, 4.0), feature spacing (20.0, 10.4), feature width (12.7), and plate dimensions (24 ± 0.3). A 'Pin #1 Indicator' points to a feature. A cross-section 'Section A-A' is shown on the left. A 'Direction of feed' arrow points right.

Inductance characteristics

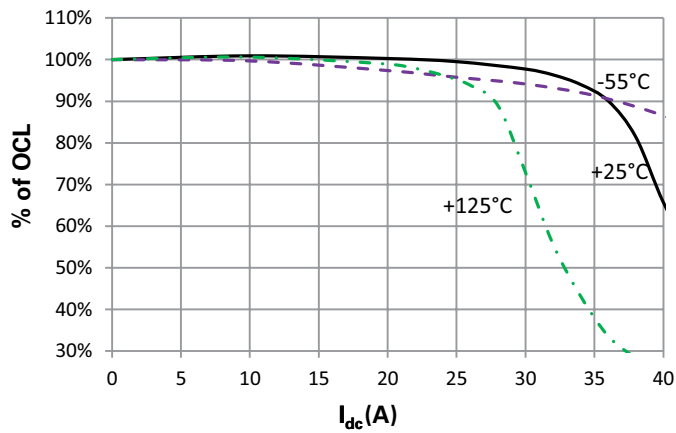
HCV1206-R42-R



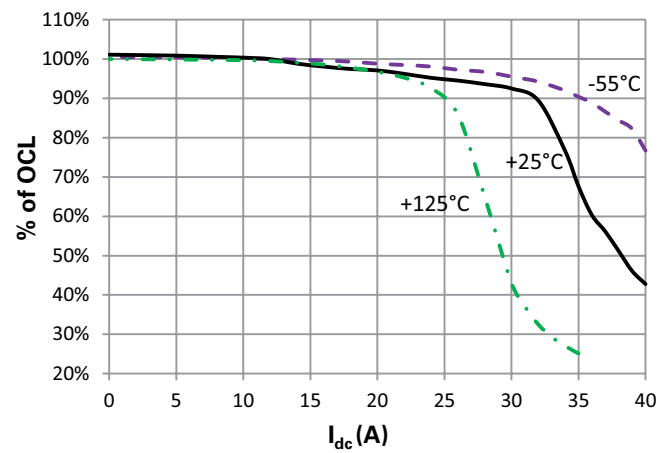
HCV1206-R48-R



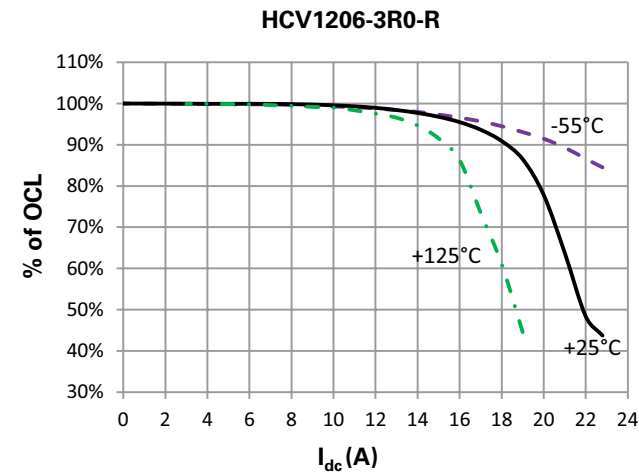
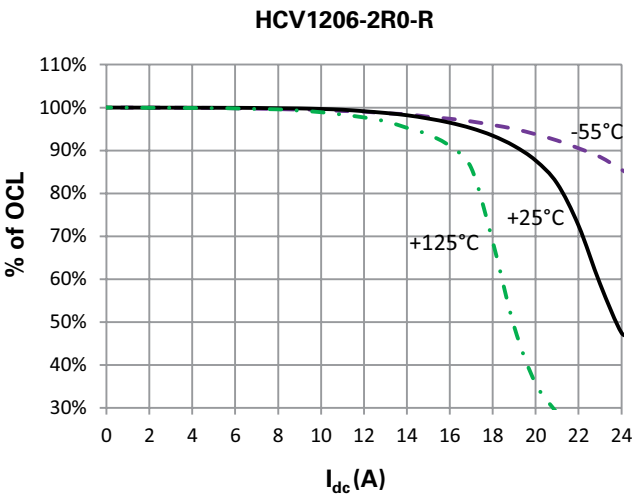
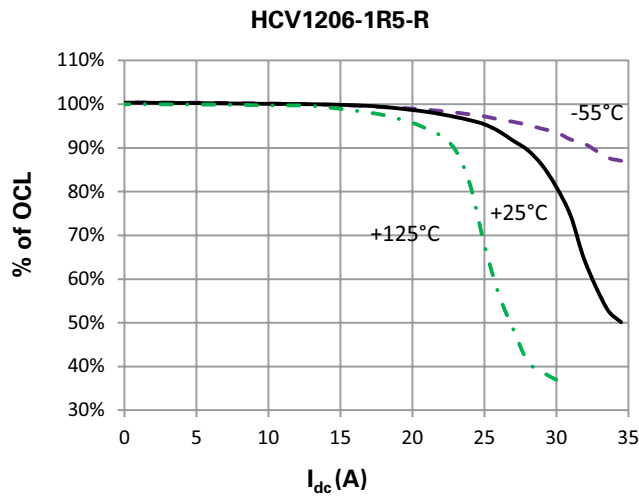
HCV1206-R90-R



HCV1206-1R0-R



Inductance characteristics



Solder reflow profile

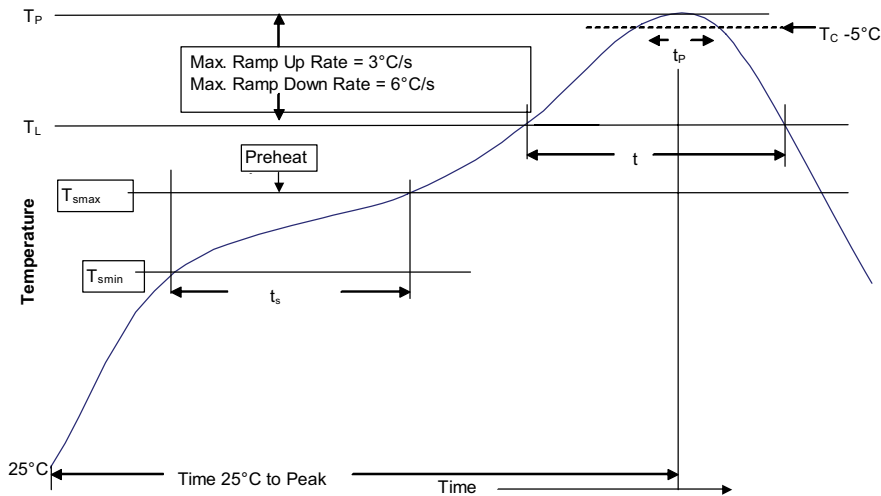


Table 1 - Standard SnPb Solder (T_C)

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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