Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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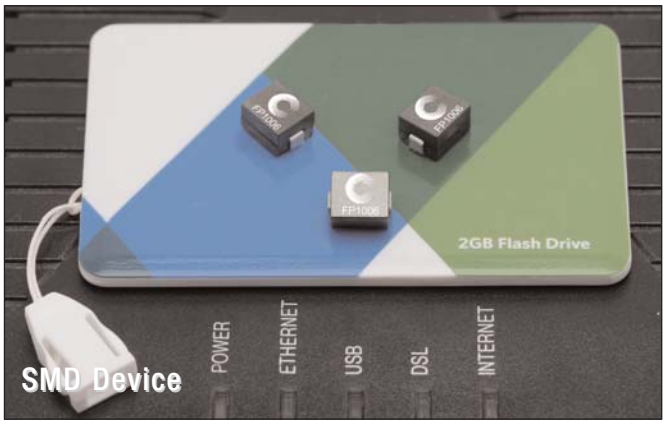
COILTRONICS®

High Current, High Frequency, Low-Profile Power Inductors

FLAT-PAC™ FP1006 Series



RoHS 2002/95/EC

Applications

- Multi-phase regulators
- Voltage Regulator Module (VRM)
- Point-of-load modules
- Desktop and server VRMs and EVRDs
- Data networking and storage systems
- Notebook regulators
- Graphics cards and battery power systems
- DCR sensing

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: J-STD-020D compliant

Packaging

- Supplied in tape and reel packaging, 850 parts per reel, 13" diameter reel

Description

- Halogen free
- 125°C maximum total temperature operation
- 10.2 x 8.0 x 6.0mm surface mount package
- Ferrite core material
- High current carrying capacity, Low core losses
- Controlled DCR tolerance for sensing circuits
- Inductance range from 85nH to 220nH
- Current range from 38 to 100 amps
- Frequency range up to 2MHz
- RoHS compliant

Product Specifications

Part Number[7]	OCL[1] ± 10% (nH)	FLL[2] Min. (nH)	I_{rms}[3] (Amps)	$I_{sat}1$[4] @ 25°C (Amps)	$I_{sat}2$[5] @ 125°C (Amps)	DCR (mΩ) @ 20°C	K-factor[6]
R1 Version							
FP1006R1-R08-R	85	61	53	100	70	0.27 ± 12%	454
FP1006R1-R10-R	100	72		85	64		454
FP1006R1-R12-R	120	86		71	53		454
FP1006R1-R16-R	160	115		55	40		454
FP1006R1-R22-R	220	158		38	28		454
R2 Version							
FP1006R2-R08-R	85	61	45	100	70	0.36 ± 8.6%	454
FP1006R2-R10-R	100	72		85	64		454
FP1006R2-R12-R	120	86		71	53		454
FP1006R2-R16-R	160	115		55	40		454
FP1006R2-R22-R	220	158		38	28		454

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.10V_{rms}, 0.0Adc

2 Full Load Inductance (FLL) Test Parameters: 100kHz, 0.1V_{rms}, $I_{sat}1$

3 I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB pad layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 125°C under worst case operating conditions verified in the end application.

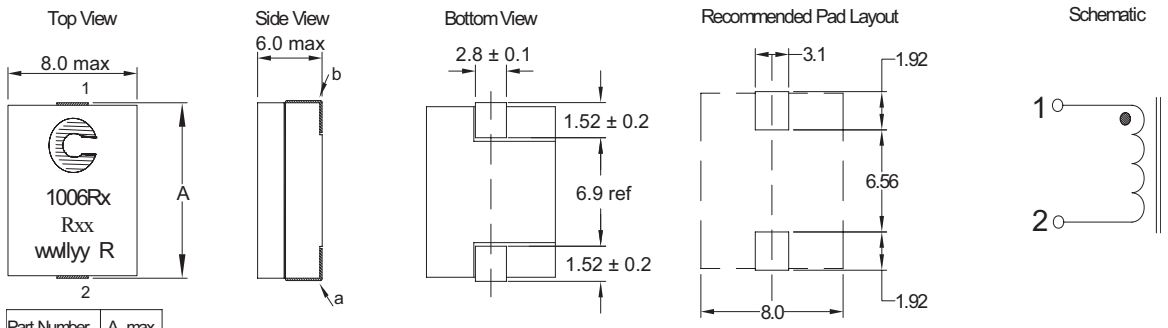
4 $I_{sat}1$: Peak current for approximately 20% rolloff at +25°C.

5 $I_{sat}2$: Peak current for approximately 20% rolloff at +125°C.

6 K-factor: Used to determine B_{p-p} for core loss (see graph). $B_{p-p} = K * L * \Delta I * 10^{-3}$, B_{p-p} : (Gauss), K: (K-factor from table), L: (inductance in nH), ΔI (peak-to-peak ripple current in amps).

7 Part Number Definition: FP1006Rx-Rxx-R
- FP1006 = Product code and size
- Rx is the DCR indicator
- Rxx= Inductance value in µH, R = decimal point
- "-R" suffix = RoHS compliant

Dimensions - mm

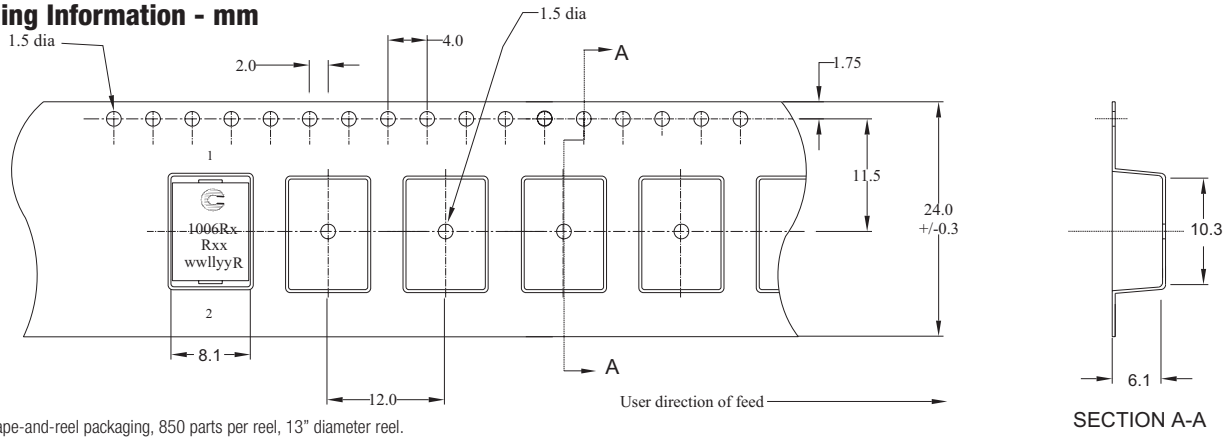


Part Number	A max
FP1006R1-R	10.2
FP1006R2-R	10

The nominal DCR is measured from point "a" to point"b."

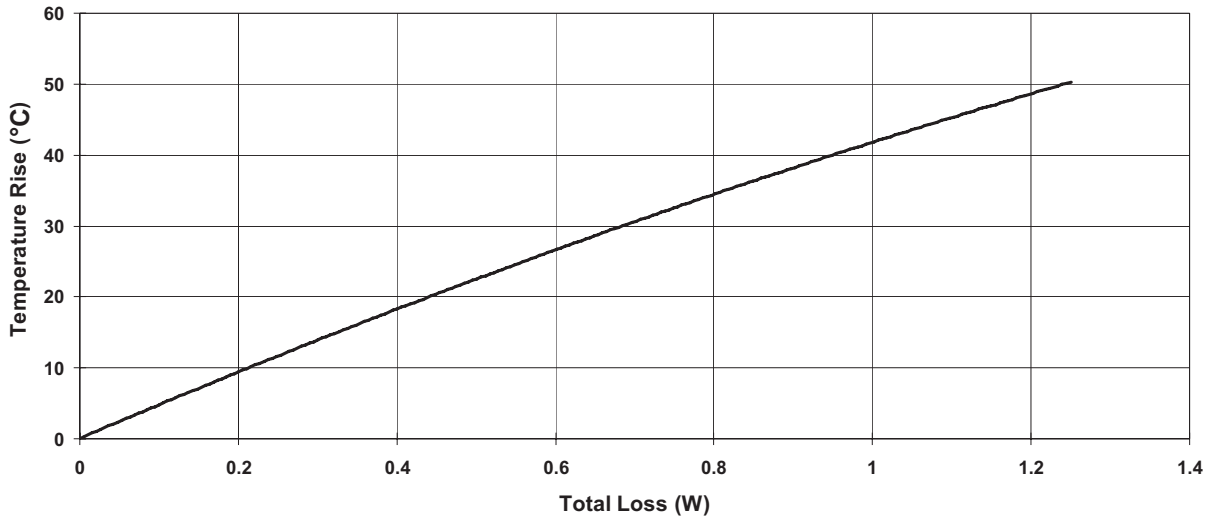
Part Marking: Coiltronics Logo 1006Rx (Rx = DCR Indicator) Rxx = Inductance value in µH. (R = Decimal point) wwllyy = Date code R = Revision level

Packaging Information - mm

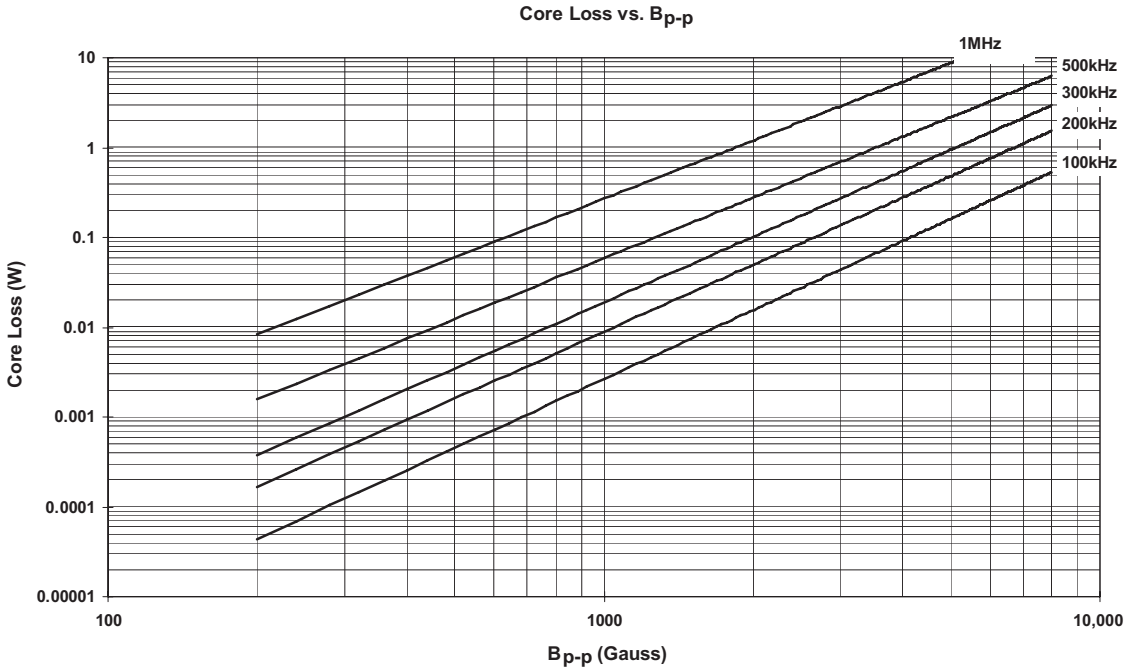


Supplied in tape-and-reel packaging, 850 parts per reel, 13" diameter reel.

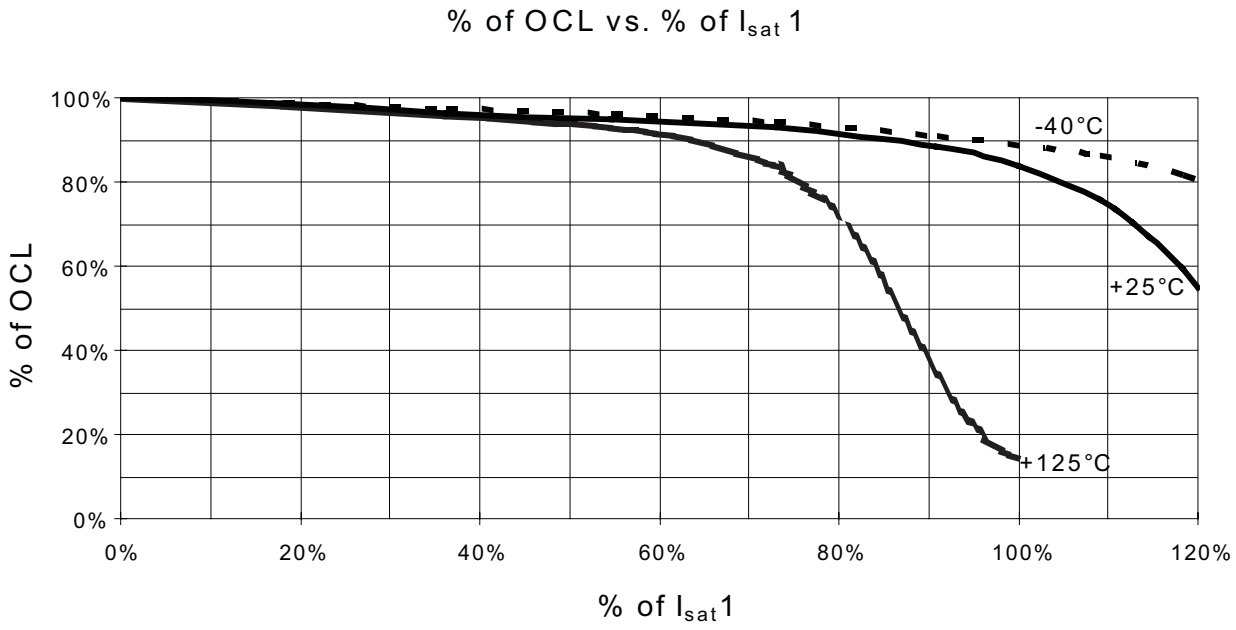
Temperature Rise vs.Total Loss



Core Loss



Inductance Characteristics



Solder Reflow Profile

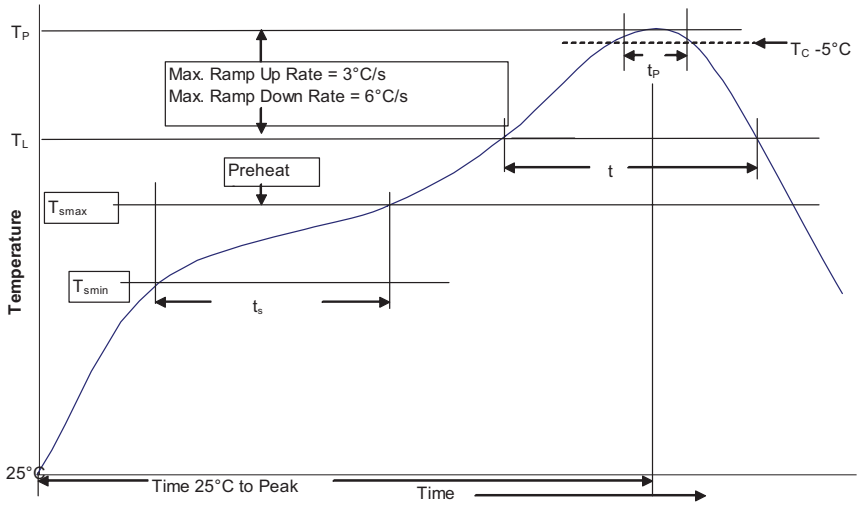


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ ≥350
<2.5mm	235°C	220°C
≥2.5mm	220°C	220°C

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

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >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-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) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 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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