

Coiltronics FPT1006 Family

Dual conductor high current power inductors



Description

- Dual conductor, two-turn construction
- Magnetically shielded
- Inductance range from 340nH to 580nH
- Current range form 19 to 40.5 Amps
- 10.5 x 8.8mm footprint surface mount package in 6.4mm height
- Ferrite core material
- Halogen free, lead free, RoHS compliant

Applications

- Compatible with Picor® Cool-Power® ZVS Buck and Buck-Boost Regulator Families

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-020D compliant



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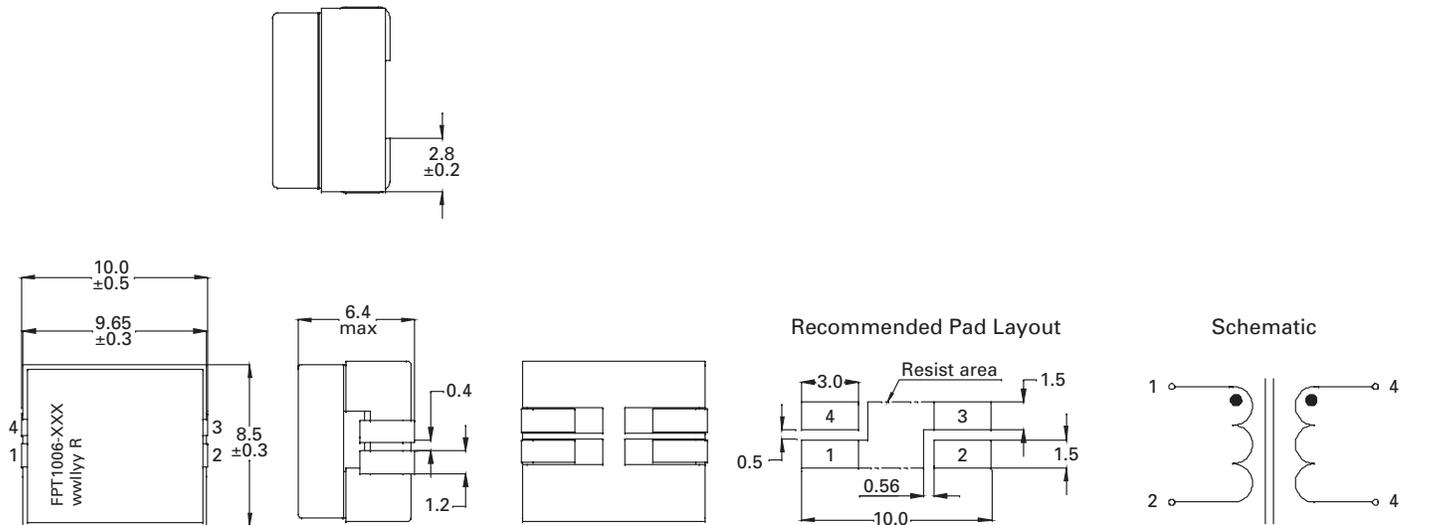
Product Specifications

Part Number ⁵	OCL ¹ (nH) ±10%	I _{rms} ² (amps)	I _{sat} ³ (amps)	DCR (mΩ) ⁴ maximum @ 20°C
FPT1006-340-R	340	19	40.5	1.0
FPT1006-400-R	400	19	35.5	1.0
FPT1006-500-R	500	19	27.5	1.0
FPT1006-580-R	580	19	23.0	1.0

1. Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1Vrms, 0.0Adc, 25°C (Pins 4-2, short 1-3)
2. I_{lim}: 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_{pk}: Peak current for approximately 5% rolloff @ +25°C

4. DCR tested from pins (1-2) and (3-4)
5. Part Number Definition: FPT1006-xxx-R
FPT1006 = Product code and size
xxx = Inductance value in nH,
-R suffix = RoHS compliant
Note: Hipot: 250Vdc minimum for 2 seconds, 1.0mA pins (1-2) and pins (4-3) to core

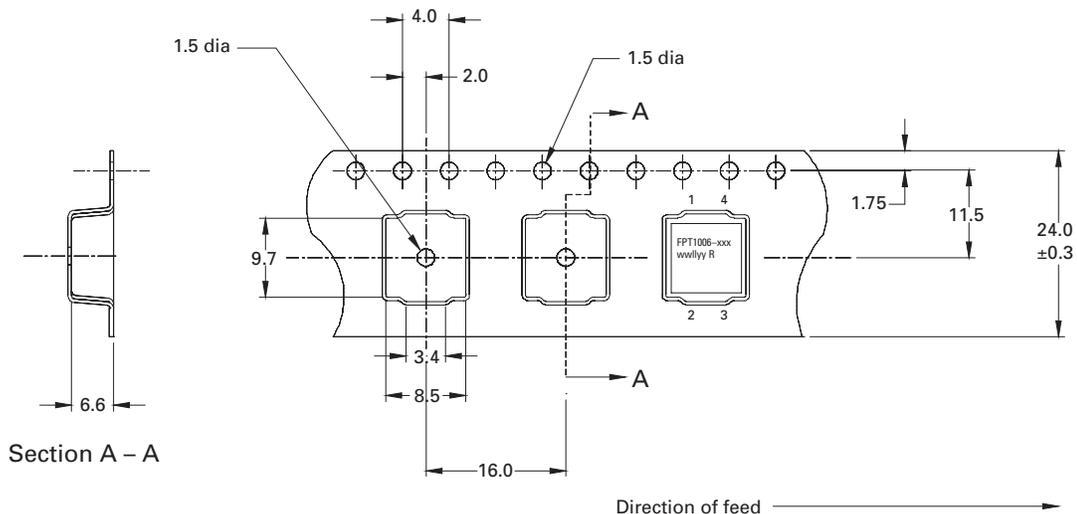
Dimensions (mm)



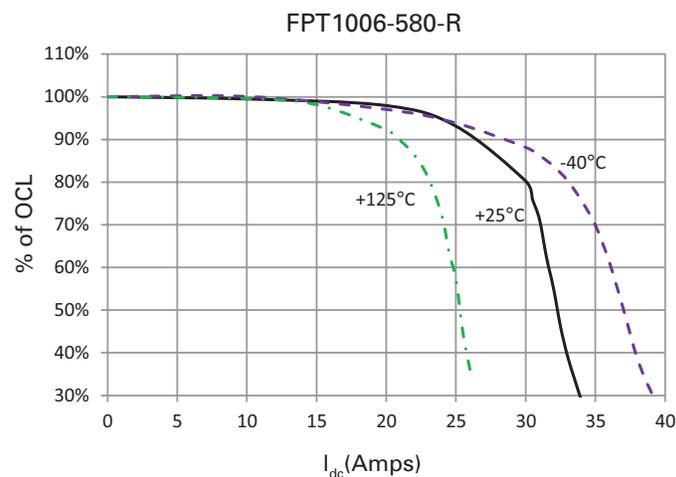
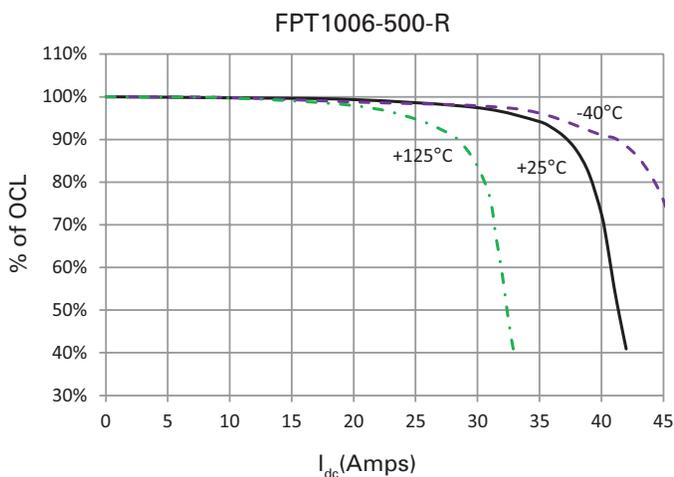
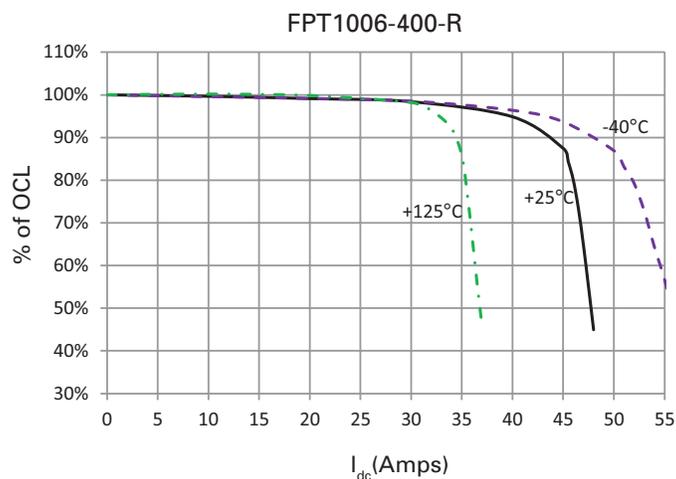
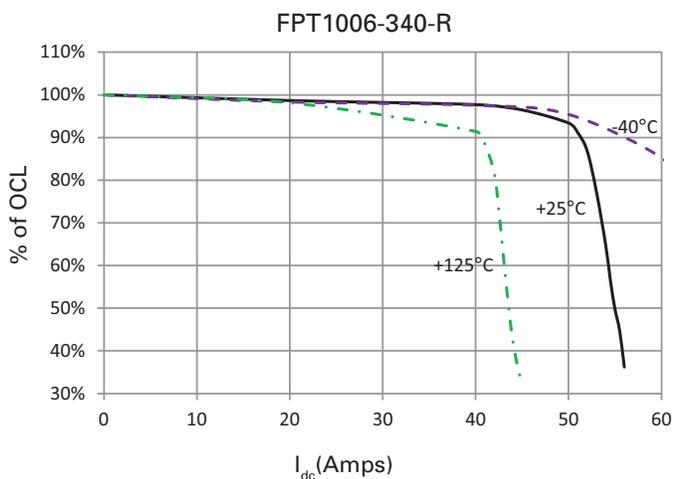
Part marking: FPT1006-xxx, xxx = inductance value in nH,
wwlllyy=date code, R=revision level
Tolerances are ±0.25 unless stated otherwise

Packaging information (mm)

Supplied in tape and reel packaging, 620 parts per 13" diameter reel



Inductance characteristics



Solder reflow profile

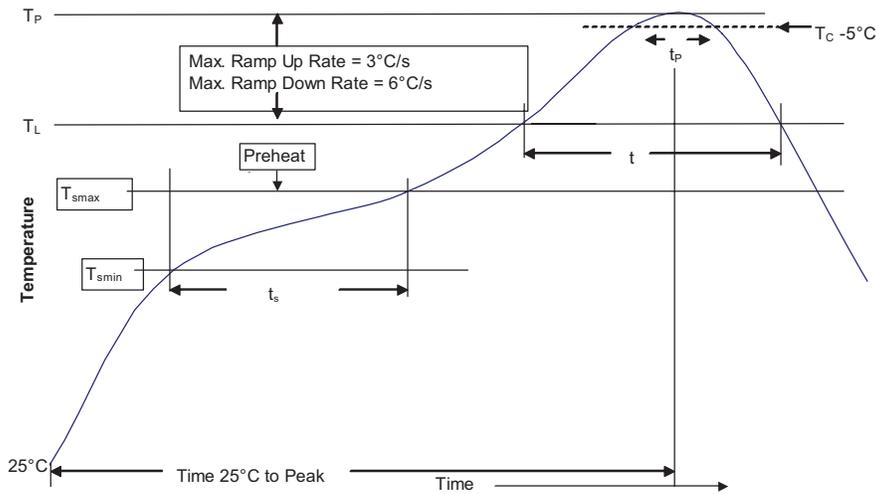


Table 1 - Standard SnPb Solder (T_C)

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-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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