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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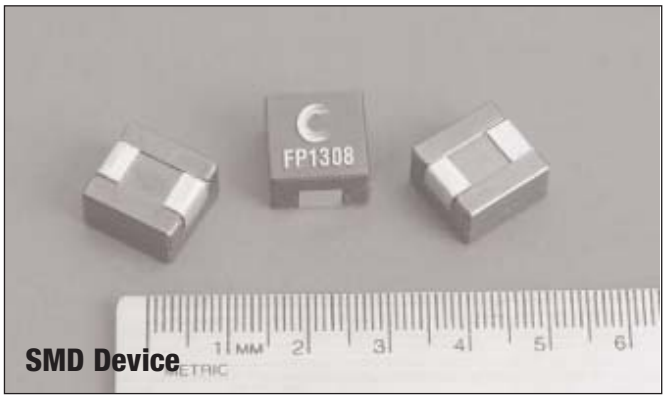
High Current, High Frequency, Power Inductors

FLAT-PAC™ FP1308 Series

RoHS

HALOGEN HF FREE



Description

- Halogen Free
- 125°C maximum total operating temperature
- 13.7 x 12.9 x 8.0mm surface mount package
- High current handling capability, compact footprint
- Ferrite core material
- Inductance range from 0.110µH to 0.440µH
- Current range from 32 to 120 amps
- Frequency range up to 2MHz

Applications

- Voltage regulator modules (VRMs) for servers and microprocessors
- Multi-phase buck inductors
- High frequency, high current switching power supplies

Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Packaging

- Supplied in tape-and-reel packaging, 400 parts per reel, 13" diameter reel

Product Specifications

Part Number[5]	Rated Inductance (µH)	OCL[1] ± 10% (µH)	I_{rms}[2] (Amps)	I_{sat}[3] (Amps)	DCR (mΩ) @ 25°C Typical	DCR (mΩ) @ 25°C Max	K-factor[4]
FP1308-R11-R	0.110	0.110	68	120	0.20	0.24	21.330
FP1308-R21-R	0.210	0.210	68	72	0.20	0.24	21.333
FP1308-R26-R	0.260	0.260	68	60	0.20	0.24	21.335
FP1308-R32-R	0.320	0.320	68	45	0.20	0.24	21.340
FP1308-R44-R	0.440	0.440	68	32	0.20	0.24	21.366

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, $1.0V_{rms}$, 0.0Adc

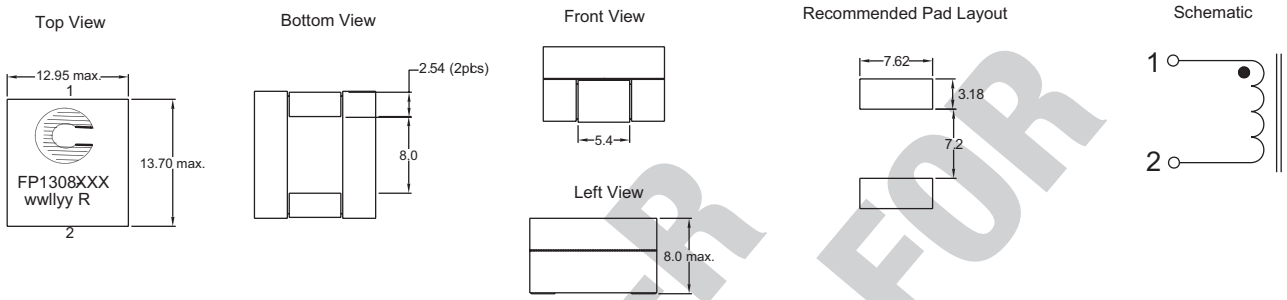
2 I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB pad layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not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

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

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

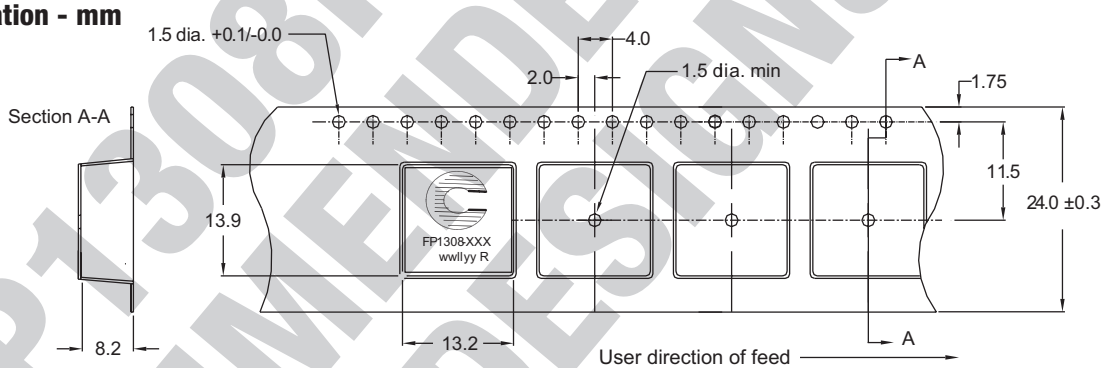
5 Part Number Definition: FP1308-xxx-R
- FP1308 = Product code and size
- xxx= Inductance value in µH, R = decimal point. If no "R" is present, then third character = # of zeros.
- "-R" suffix = RoHS compliant

Dimensions - mm



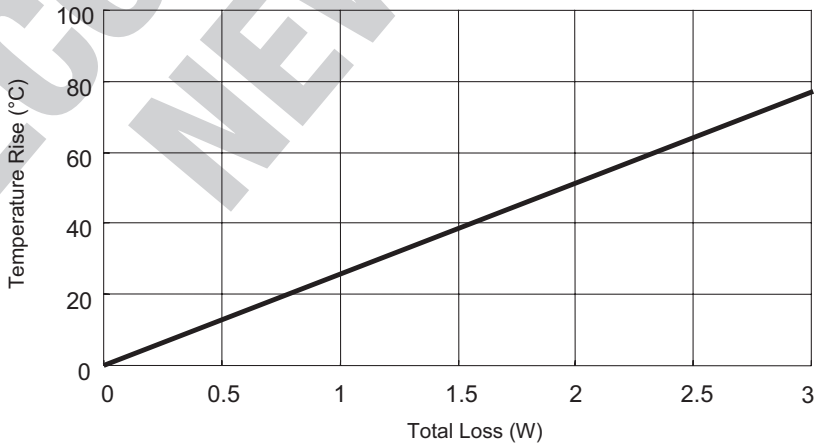
Part Marking: FP1308 xxx = Inductance value in µH. (R = Decimal point). If no "R" is present, then last character is # 0f zeros wwllyy = Date code R = Revision level

Packaging Information - mm

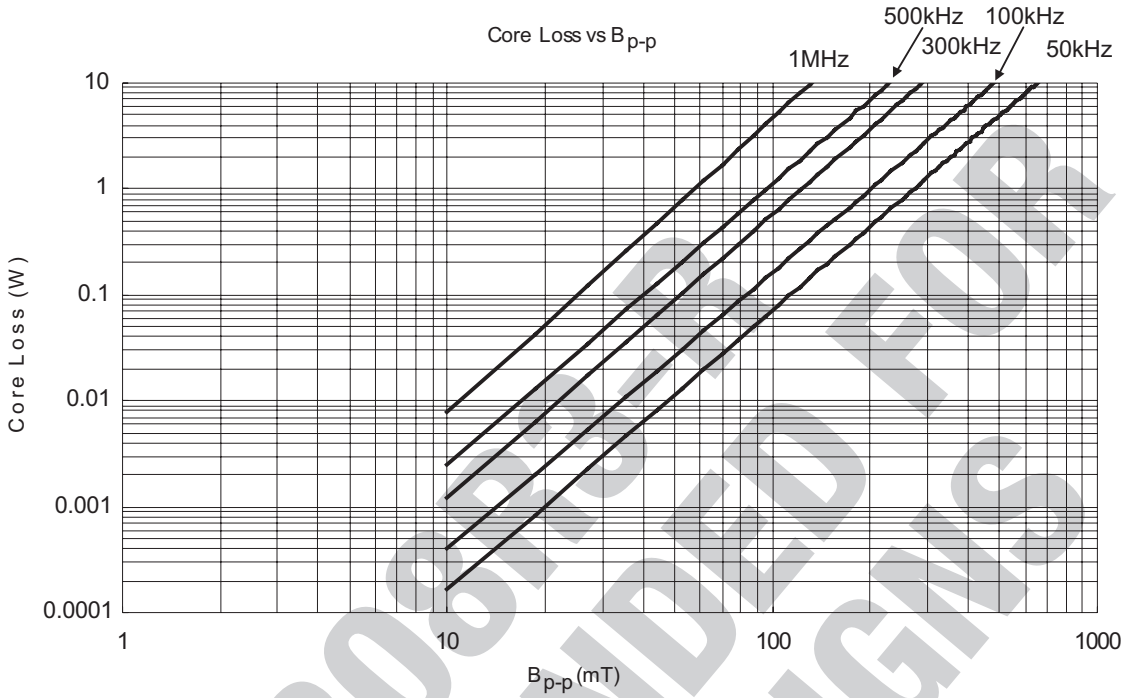


Supplied in tape-and-reel packaging, 400 parts per reel, 13" diameter reel.

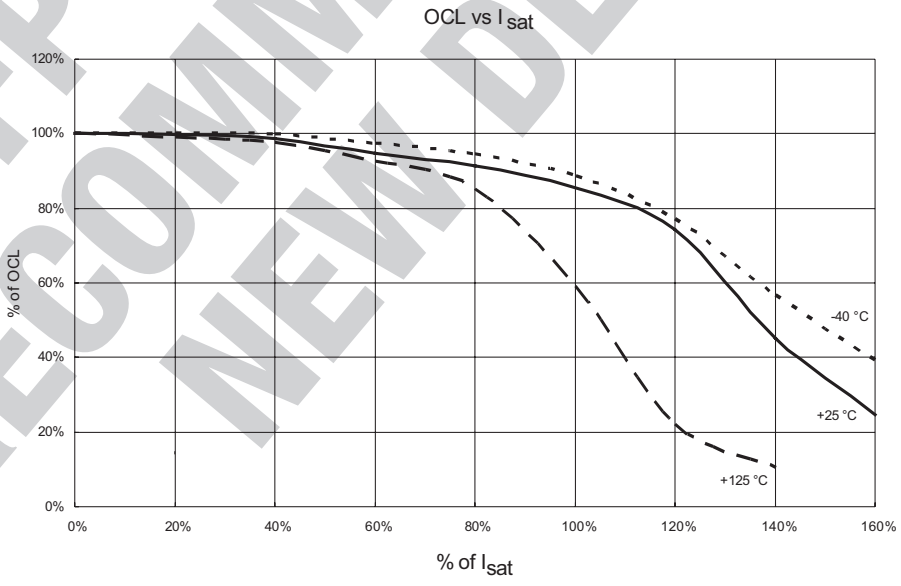
Temperature Rise vs. Total Loss



Core Loss



Inductance Characteristics



Solder Reflow Profile

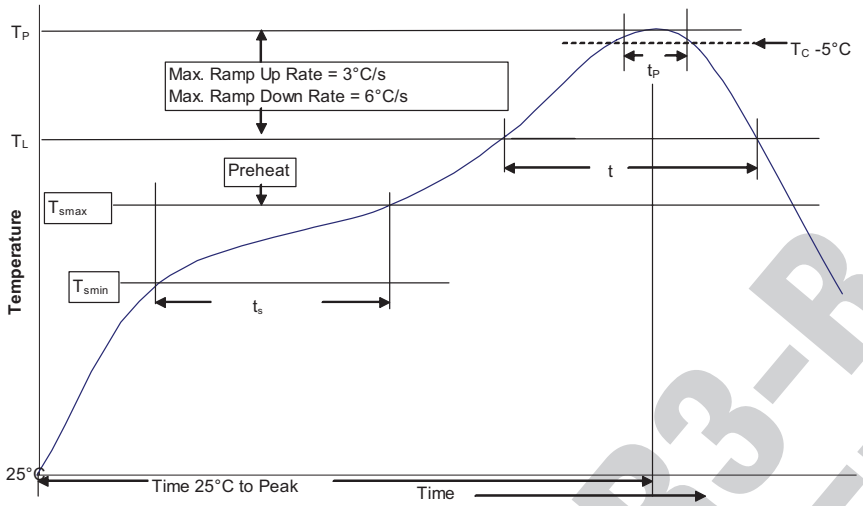


Table 1 - Standard SnPb Solder (T_C)

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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