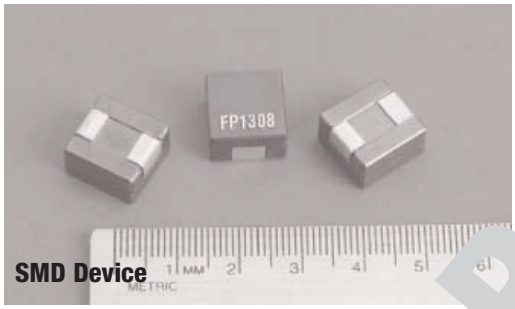
FP1308

High frequency, high current power inductors



Product features

- 13.7 x 12.9 x 8.0mm surface mo ack e
- High current handling capability con
  footprint
- Ferrite core material
- Inductance range from 0 10µ to 0.4 µH
- Current range from 32 to
- Frequency range up 2M
- Halogen free, lead ee oHS mpliant

Applications

- Voltage regulator modules (VRMs) for servers and microprocessors
- Multi-phase buck tors
- High frequency h t switching power

supplies

Enviro nta

- Stora mperature range (component): -40 °C t 25 °C
  Operating t mperatu range: -40 °C to +125 °C
  mbient plus self- mperature rise)
- S r reflow tem
  I-S -020 (lat evision) co pliant

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.

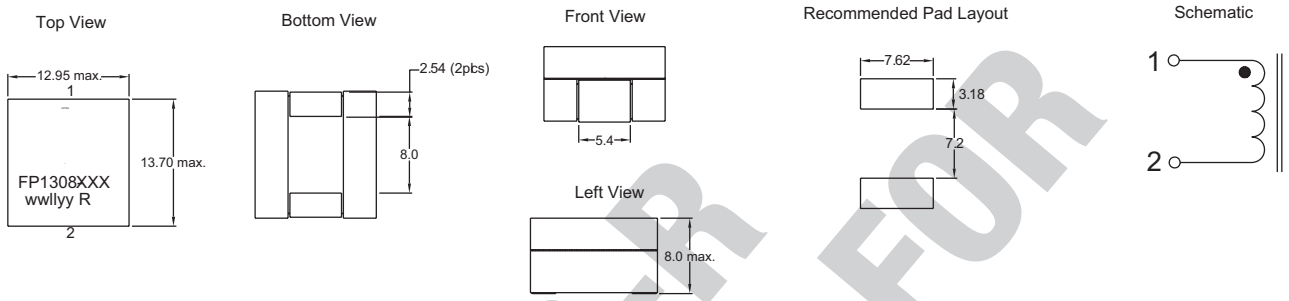
3 I_{sat}: Peak current for approximately 20% rolloff at +25°C.

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

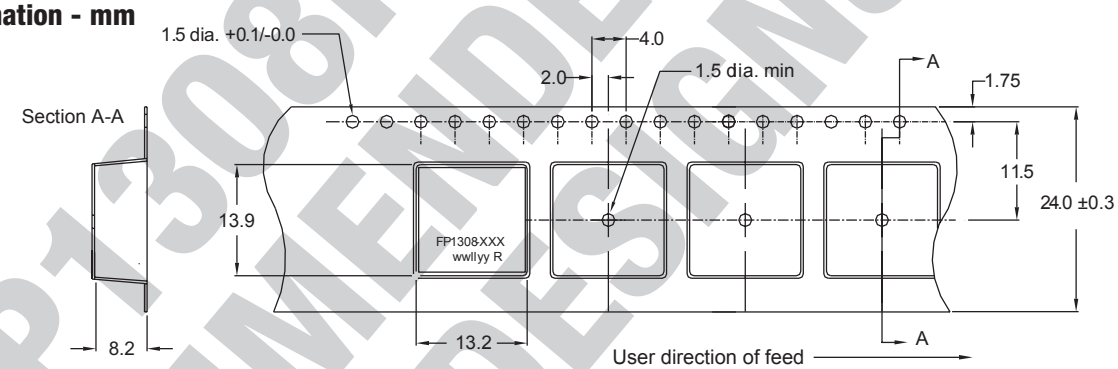
Powering Business Worldwide

Dimensions - mm



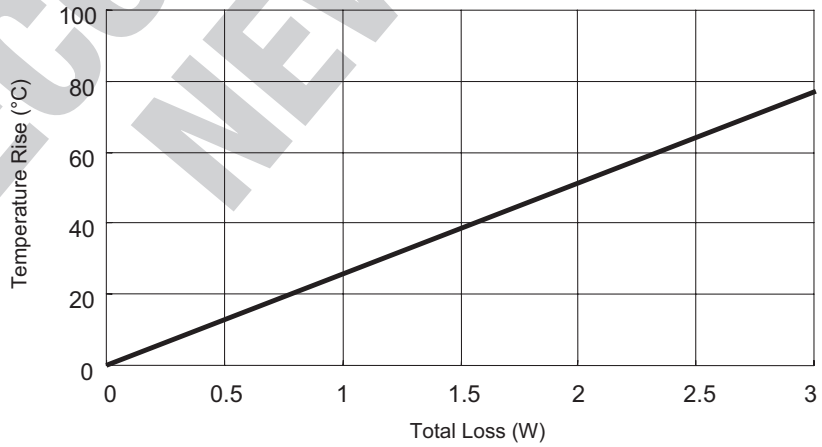
Part Marking: FP1308 xxx = Inductance value in µH. (R = Decimal point). If no "R" is present, then last character is # 0f zeros wwllyy = Date code R = Revision level

Packaging Information - mm

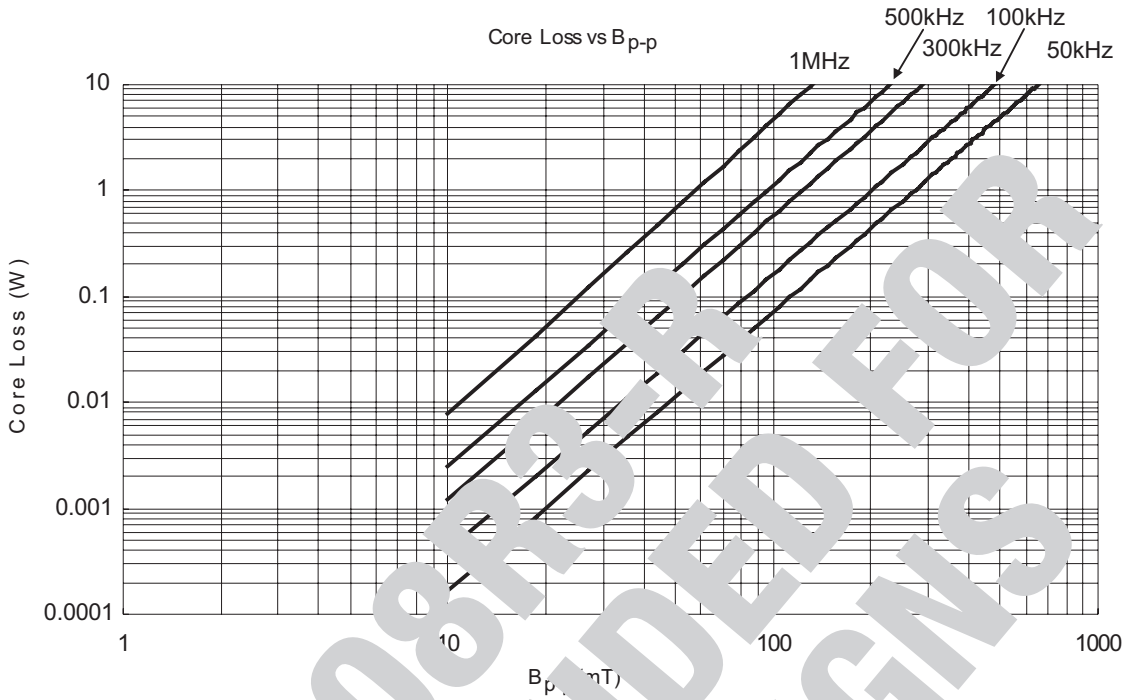


Supplied in tape-and-reel packaging, 400 parts per reel, 13" diameter reel.

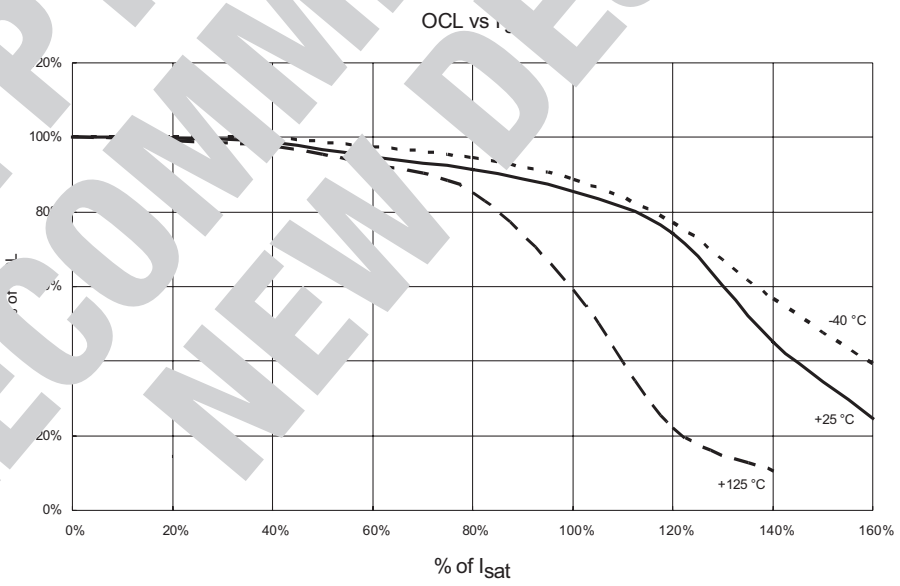
Temperature Rise vs. Total Loss



Core Loss



Inductance Characterist



Solder Reflow Profile

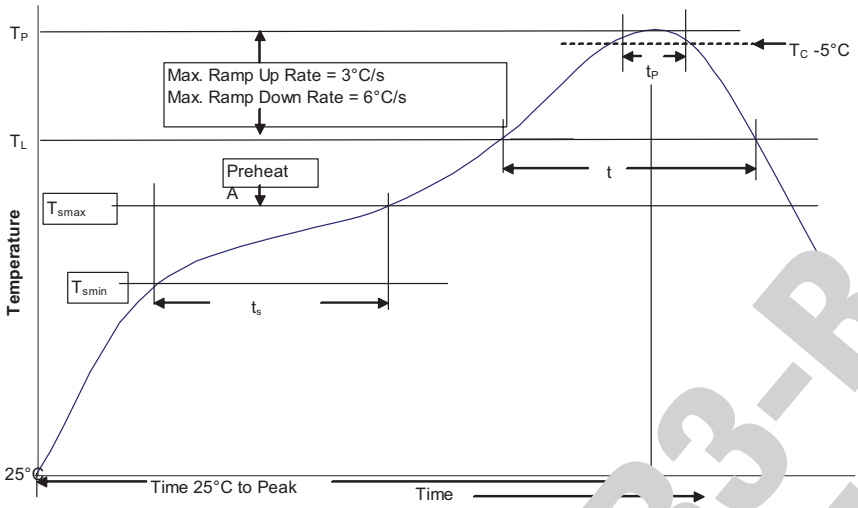


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ ≥350
<2.5mm	235°C	0°C
≥2.5mm	220°C	

Table 2 - Lead [illegible] (T_C)

Package Thick[illegible]s	[illegible]ume [illegible] 350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	0°C	250°C	245°C
2.5mm	2[illegible]°C	245°C	245°C

Reference JDEC J-STD-020

Profile Feature		[illegible]d SnPb Solder	[illegible]Free Solder
Preheat and Soak	• Temperature min. (T_{sm}	00°C	150°C
	• Temperature max. (T_{s} [illegible]x)	50°C	200°C
	• Time (T_{smin} to [illegible])	60 120 Se[illegible]ds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		°C/ Sec[illegible]d M[illegible]	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		3°C 60 15[illegible]onds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of th[illegible] sp[illegible]ied classification [illegible]pe[illegible]tu[illegible] (T_C)		[illegible]econ[illegible]s**	30 Seconds**
Average ramp-down rate (T_p [illegible]max)		°C/ [illegible]d Max.	6°C/ Second Max.
Time 25°C to Peak Te[illegible]pera[illegible]ure		[illegible]inutes Max.	8 Minutes Max.

* Tolerance for peak prof[illegible]mperature (T_p) is [illegible]ed as a [illegible]plier minimum and a [illegible]aximum.

** Tolerance for time at peak p[illegible]e temperature [illegible]s [illegible]d as a suppl[illegible] minimum and a user maximum.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
www.eaton.com/electronics

Printed in USA
Publication No. DS4313 BU-SB111090
June 2017

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FP1308-R21-R FP1308-R26-R