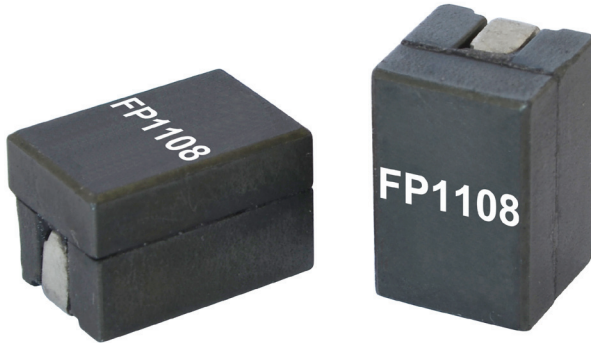


Coiltronics FP1108 Series

High frequency, high current, power inductors



Product description

- Halogen free, lead free, RoHS compliant
- 125°C maximum total temperature operation
- 11.0 x 8.0 x 7.5mm maximum surface mount package
- Ferrite core material
- Controlled DCR for sensing circuits
- Inductance range from 100nH to 210nH
- Current range from 55 to 100+ amps

Applications

- Multi-phase regulators
- Voltage Regulator Modules (VRMs)
- Desktop and server VRMs and EVRDs
- Notebook regulators
- Data networking and storage systems
- Graphics cards and battery power systems
- Point-of-Load modules
- DCR Sensing circuits

Environmental data

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

Packaging

- Supplied in tape and reel packaging, 500 parts per 13" reel



Powering Business Worldwide



The Coiltronics brand of magnetics (formerly of the Bussmann Division of Cooper Industries) is now part of Eaton's Electrical Group, Electronics Division.

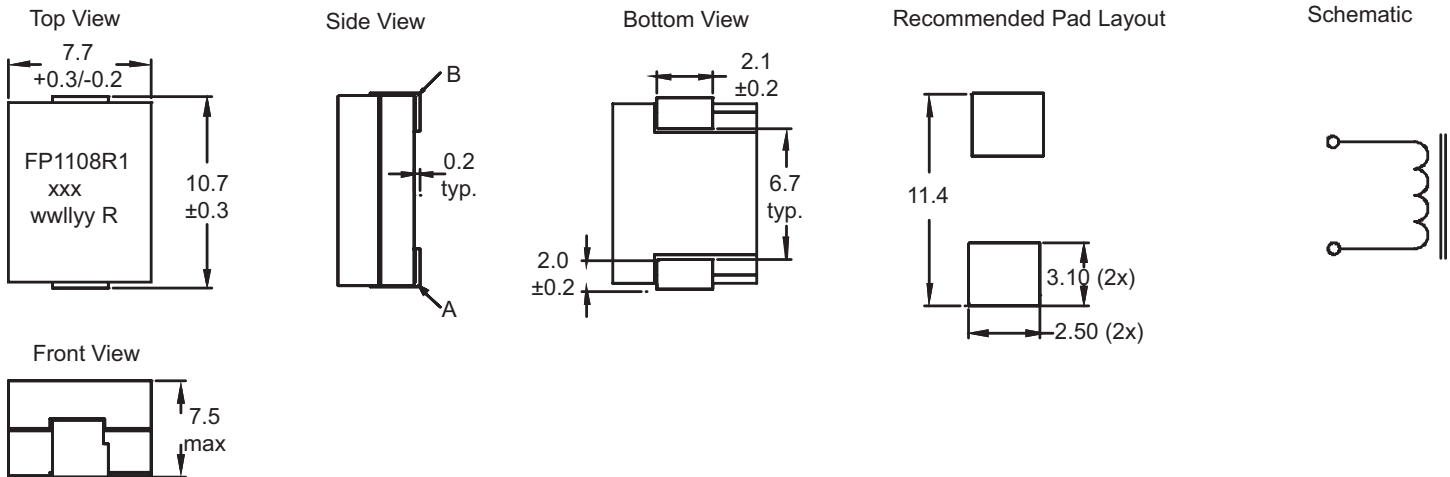
Coiltronics is now part of Eaton
Same great products plus even more.

Product specifications

Part Number ⁹	OCL ¹ (nH) ±10%	FLL min. ² (nH)	I _{rms} ³ (Amps)	I _{sat} 1 ⁴ (Amps)	I _{sat} 2 ⁵ (Amps)	I _{sat} 3 ⁶ (Amps)	I _{sat} 4 ⁷ (Amps)	DCR (mΩ) @ 20°C	K-factor ⁸
FP1108R1-R10-R	100	81	65	100+	96	94	90	0.29±5%	330
FP1108R1-R15-R	150	110		77	72	66	63		330
FP1108R1-R18-R	180	132		65	61	58	50		330
FP1108R1-R21-R	210	151		55	51	48	45		330

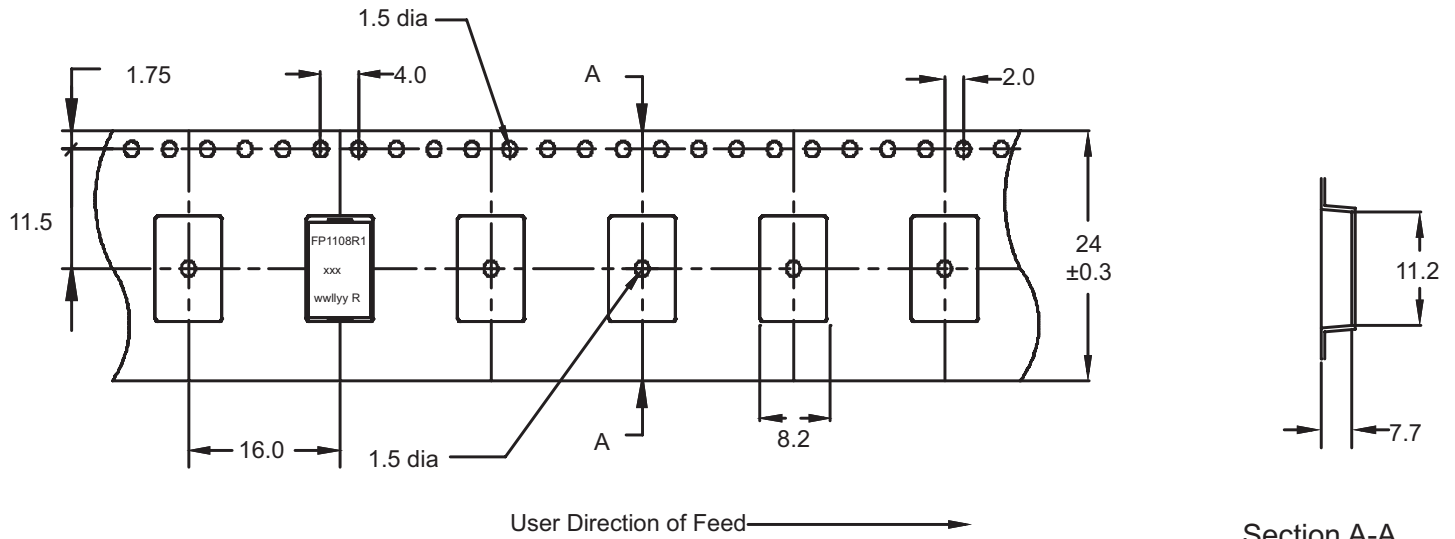
- Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1V_{rms}, 0.0A_{dc}, 25°C
- Full Load Inductance (FLL) Test Parameters: 100kHz, 0.1V_{rms}, I_{sat} 1
- I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace 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.
- I_{sat} 1: Peak current for approximately 20% (R10 10%) rolloff @ +25°C (R10 10%)
- I_{sat} 2: Peak current for approximately 20% (R10 10%) rolloff @ +85°C
- I_{sat} 3: Peak current for approximately 20% (R10 10%) rolloff @ +100°C
- I_{sat} 4: Peak current for approximately 20% (R10 10%) rolloff @ +125°C
- K-factor: Used to determine B_{pp} for core loss (see graph). B_{pp} = K * L * ΔI. B_{pp}:(Gauss), K: (K-factor from table), L: (Inductance in μH), ΔI (peak to peak ripple current in amps).
- Part Number Definition: FP1108Rx-yyy-R
 - FP1108Rx = Product code and size
 - Rx = DCR indicator
 - yyy= Inductance value in μH
 - "-R" suffix = RoHS compliant

Dimensions - mm



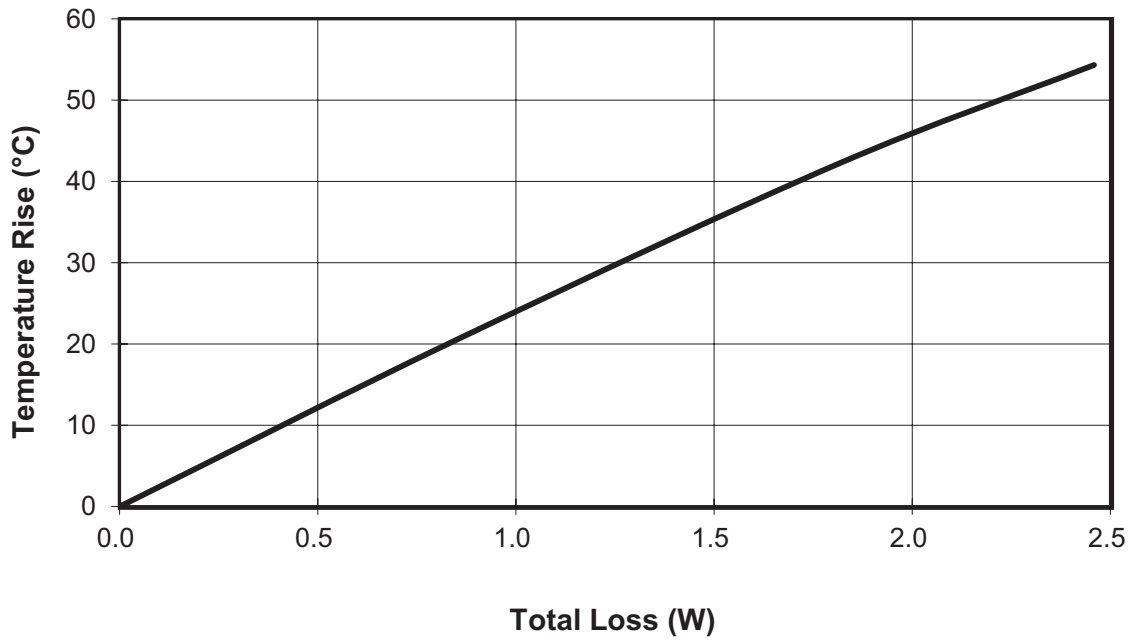
DCR measured from point "A" to point "B"
 Part marking: FP1108R1 (Product code and size), xxx = Inductance value in μH, wwllly= date code, R= revision level
 Tolerances are ±0.15 millimeters unless stated otherwise
 PCB tolerances are ±0.1 millimeters unless otherwise specified.
 All soldering surfaces to be coplanar within 0.1 millimeters.
 Termination finish: matte Sn with Ni underplate

Packaging information - mm

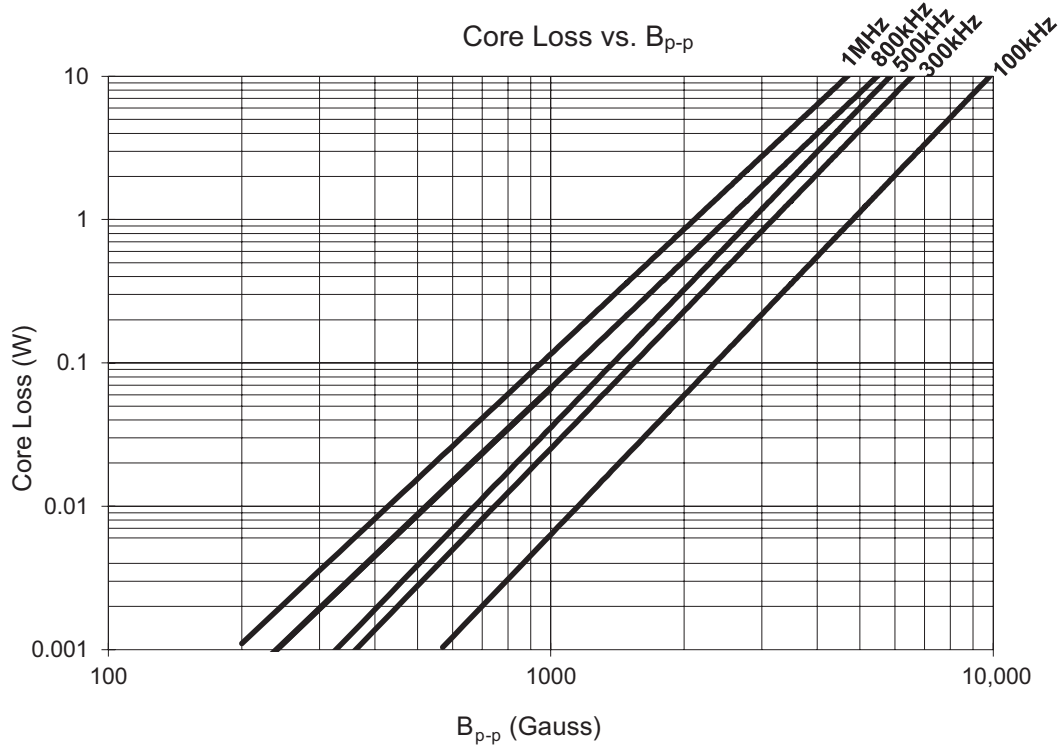


Supplied in tape and reel packaging, 500 parts per 13" diameter reel,

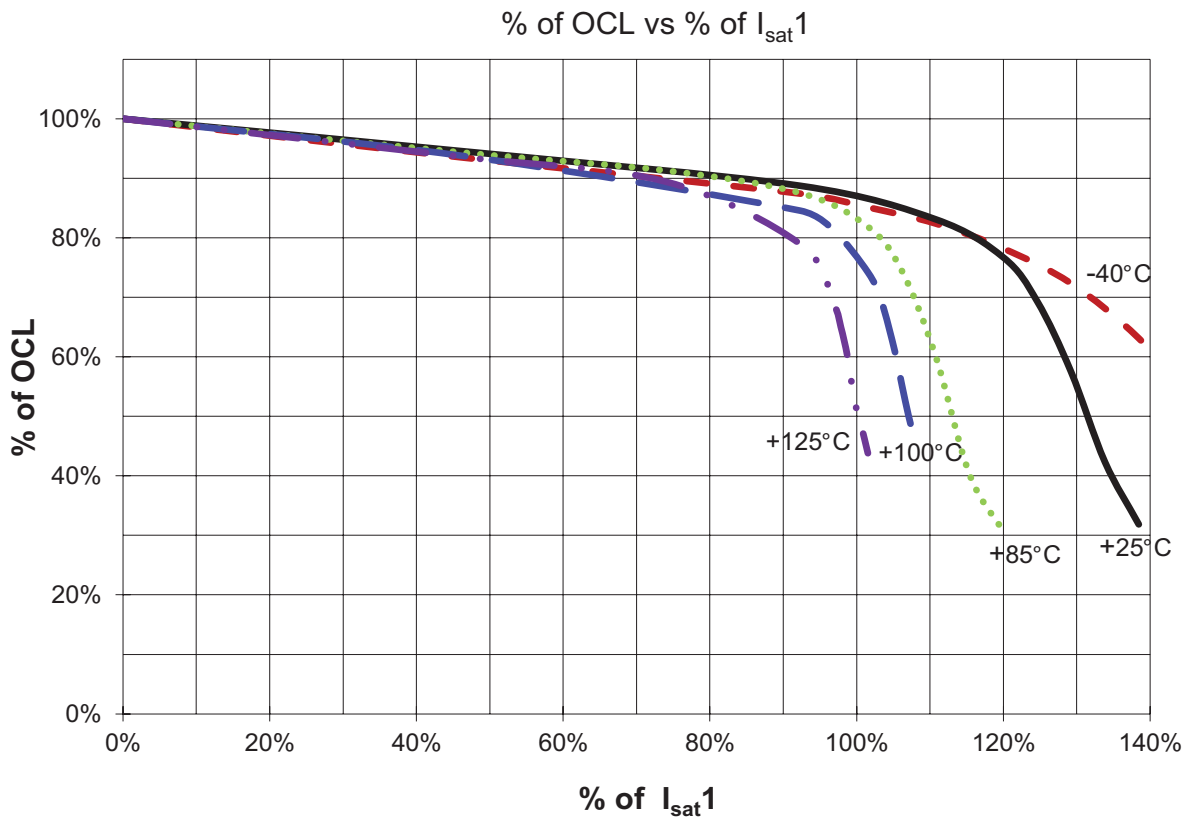
Temperature rise vs. total loss



Core loss



Inductance characteristics



Solder reflow profile

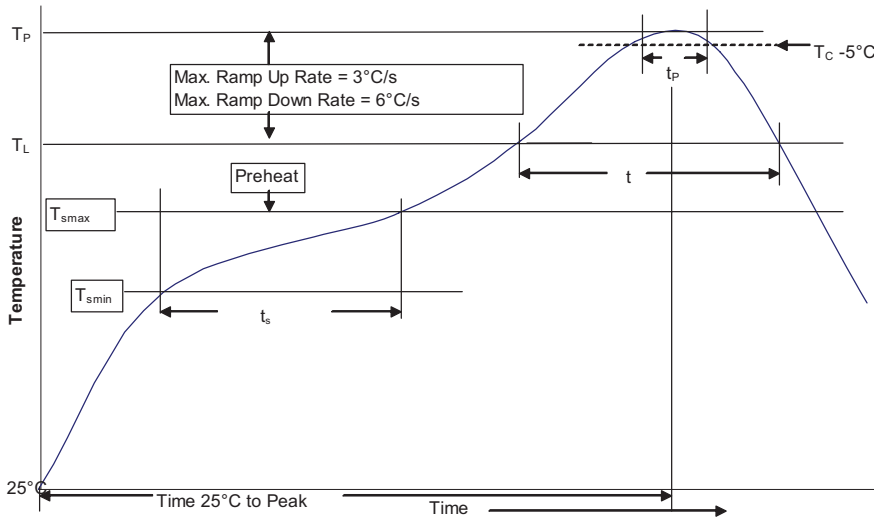


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume <350 mm^3	Volume ≥ 350 mm^3
$<2.5mm$	235°C	220°C
$\geq 2.5mm$	220°C	220°C

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

Package Thickness	Volume <350 mm^3	Volume $350 - 2000$ mm^3	Volume >2000 mm^3
$<1.6mm$	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	100°C	150°C
• Temperature min. (T_{smin})	150°C	200°C
• Temperature max. (T_{smax})	60-120 Seconds	60-120 Seconds
• Time (T_{smin} to T_{smax}) (t_s)	3°C/ Second Max.	3°C/ Second Max.
Average ramp up rate T_{smax} to T_p	183°C	217°C
Liquidous temperature (T_L)	60-150 Seconds	60-150 Seconds
Time at liquidous (t_L)	Table 1	Table 2
Peak package body temperature (T_p)*	20 Seconds**	30 Seconds**
Time (t_p)** within 5 °C of the specified classification temperature (T_C)	6°C/ Second Max.	6°C/ Second Max.
Average ramp-down rate (T_p to T_{smax})	6 Minutes Max.	8 Minutes Max.
Time 25°C to Peak Temperature		

* 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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