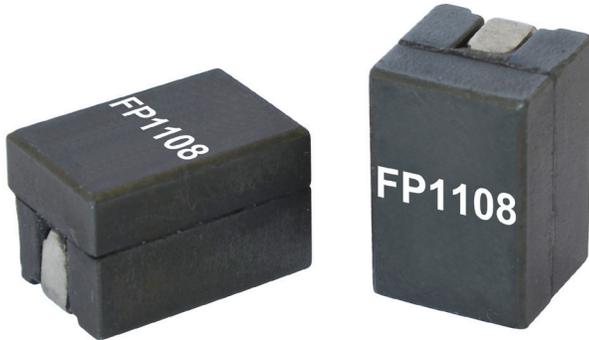


Coiltronics FP1108 Series

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.

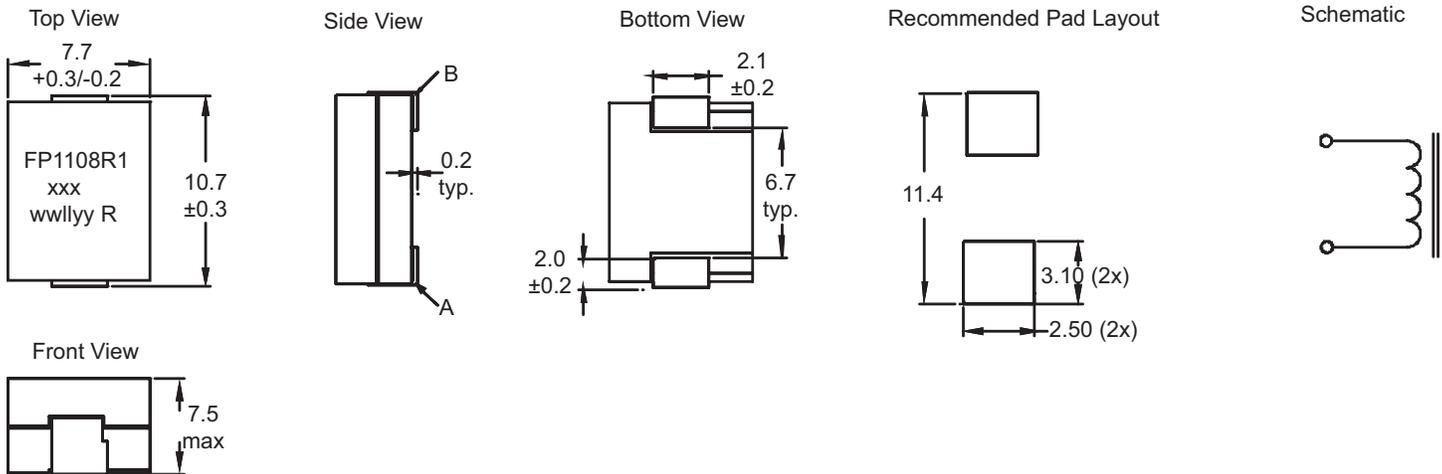
Coiltronics is now part of Eaton
Same great products plus even more.

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

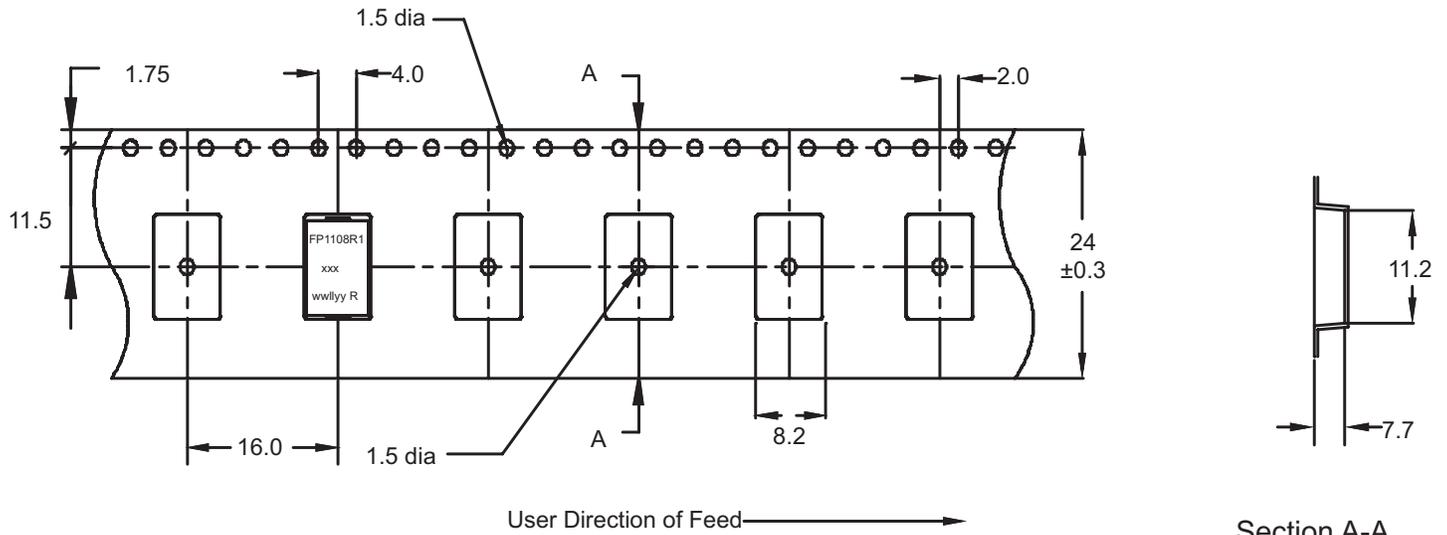
- Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1V_{rms}, 0.0A_{dc}, 25°C
- Full Load Inductance (FLL) Test Parameters: 100kHz, 0.1V_{rms}, I_{sat}1
- I_{rms}: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace 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



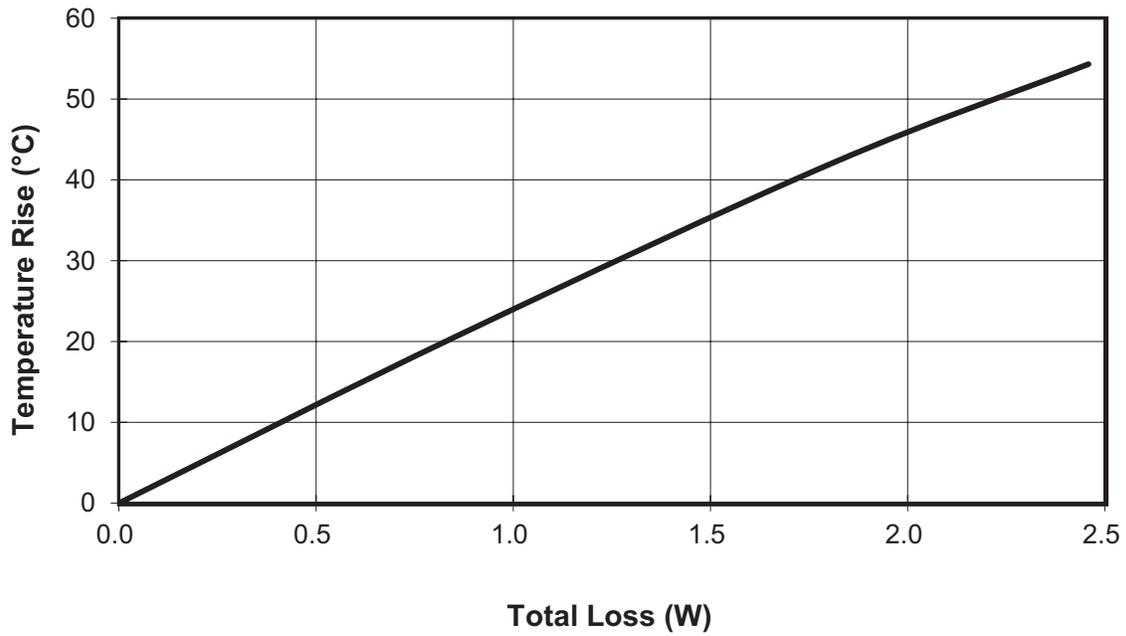
DCR measured from point "A" to point "B"
 Part marking: FP1108R1 (Product code and size), xxx = Inductance value in μH, wwllly= date code, R= revision level
 Tolerances are ±0.15 millimeters unless stated otherwise
 PCB tolerances are ±0.1 millimeters unless otherwise specified.
 All soldering surfaces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

Packaging information - mm

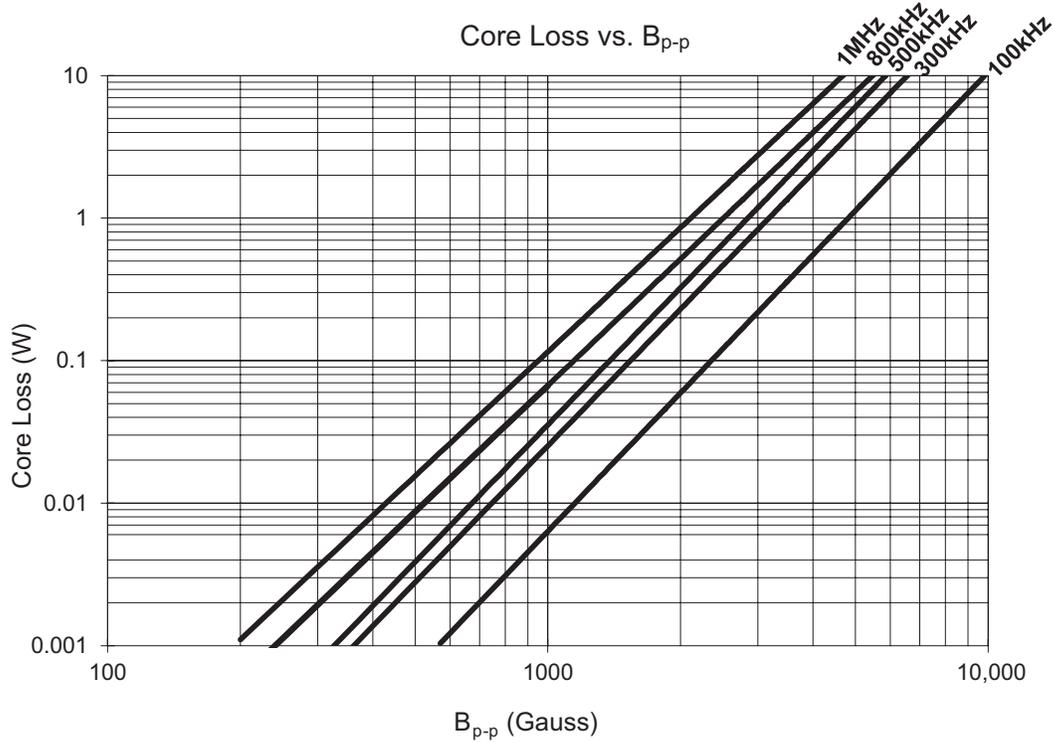


Supplied in tape and reel packaging, 500 parts per 13" diameter reel,

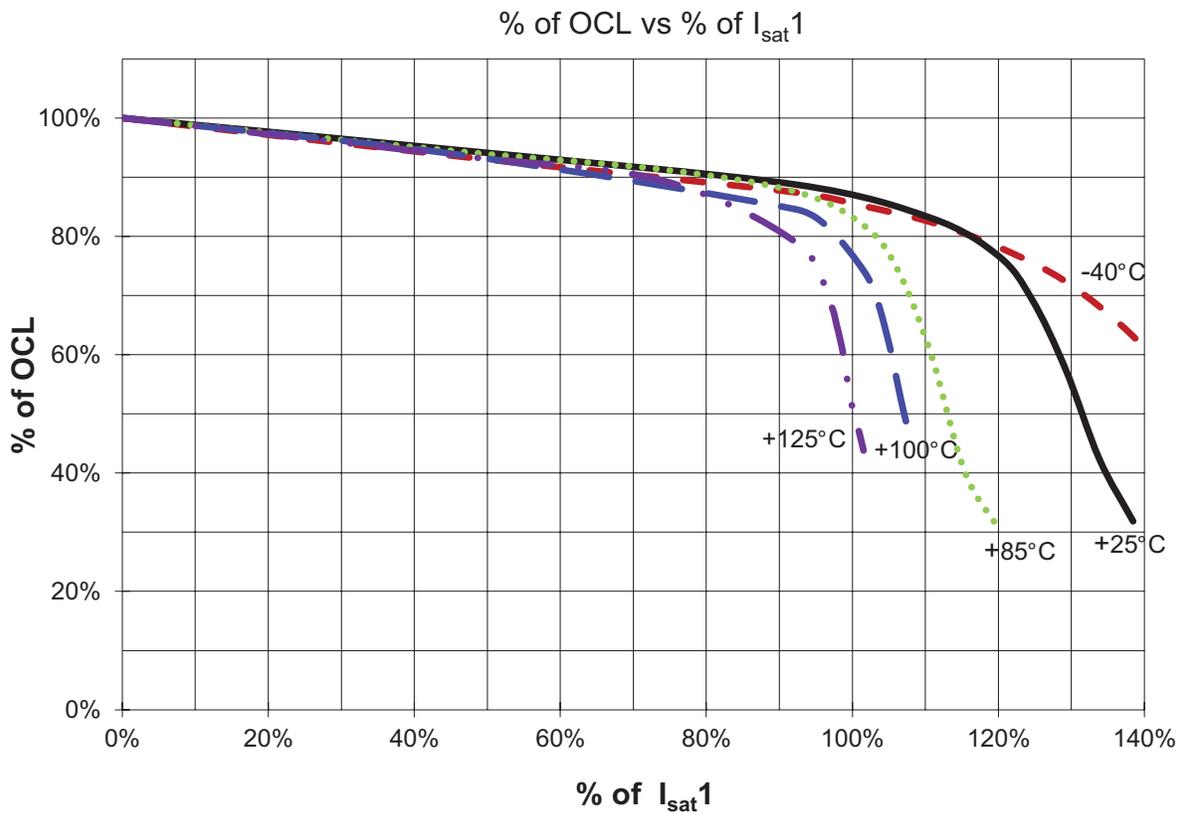
Temperature rise vs. total loss



Core loss



Inductance characteristics



Solder reflow profile

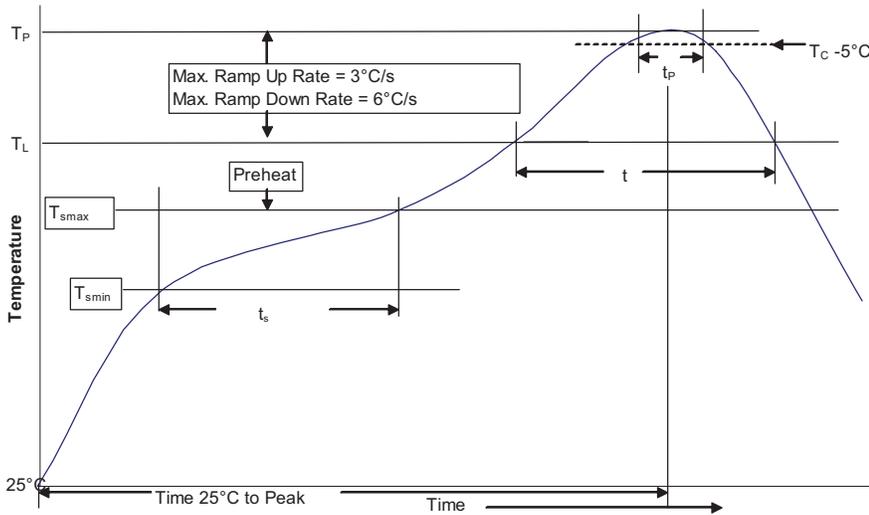


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume <350 mm ³	Volume ≥ 350 mm ³
<2.5 mm	235°C	220°C
≥ 2.5 mm	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
<1.6 mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5 mm	250°C	245°C	245°C

Reference JEDEC J-STD-020D

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	100°C	150°C
• Temperature min. (T_{smin})		
• 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.

North America
Eaton's Electrical Group
Electronics Division
1225 Broken Sound Parkway NW
Suite F
Boca Raton, FL 33487-3533
Tel: 1-561-998-4100
Fax: 1-561-241-6640
Toll Free: 1-888-414-2645

Eaton's Electrical Group
Electronics Division
P.O. Box 14460
St. Louis, MO 63178-4460
Tel: 1-636-394-2877
Fax: 1-636-527-1607

Europe
Eaton's Electrical Group
Electronics Division
Burton-on-the-Wolds
Leicestershire, LE 12 5th UK
Phone: +44 (0) 1509 882 600
Fax: +44 (0) 1509 882 786

Eaton's Electrical Group
Electronics Division
Avda Santa Eulalia, 290
Terrassa, Barcelona 08223 Spain
Phone: +34-93-736-2813
Fax: +34-93-783-5055

Asia Pacific
Eaton's Electrical Group
Electronics Division
No.2, #06-01
Serangoon North Avenue 5
Singapore 554911
Tel: +65 6645 9888
Fax: +65 6728 3155

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**Eaton's Electrical Group
Electronics Division**
114 Old State Road
Ellisville, MO 63021
United States
www.eaton.com/elx



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Publication No. 10227 — BU-SB14230
April 2014

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