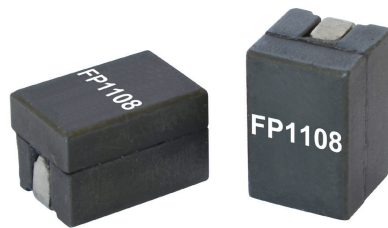


# FP1108R

## High frequency, high current power inductors



### Product features

- 11.0 mm x 8.0 mm x 7.5 mm surface mount package
- Ferrite core material
- Tight tolerance DCR for sensing circuits
- Inductance range from 100 nH to 210 nH
- Current range from 55 A to 100+ A

### Applications

- Multi-phase regulators
- Voltage Regulator Modules (VRMs)
- Desktop and server VRMs and EVRDs
- Notebook and laptop 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 plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant

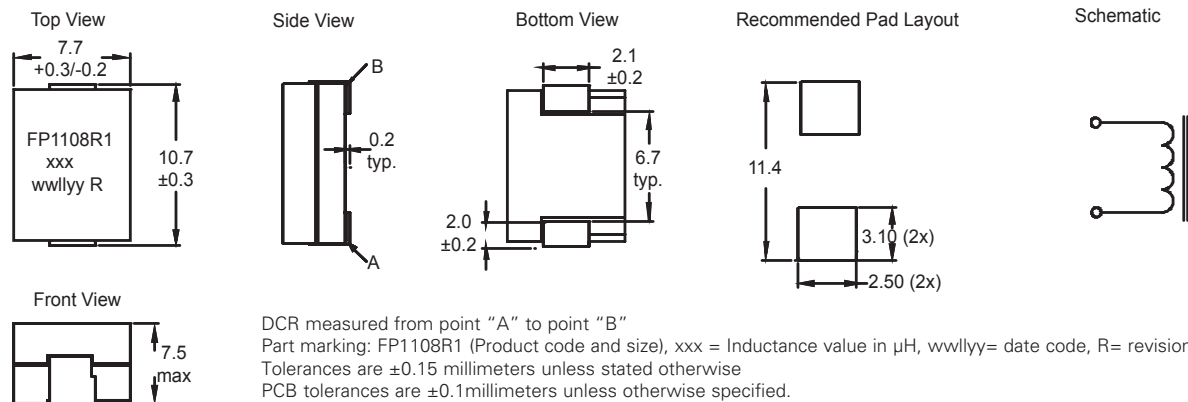


Product specifications

Part Number <sup>9</sup>	OCL <sup>1</sup> (nH) ±10%	FLL min. <sup>2</sup> (nH)	I <sub>rms</sub> <sup>3</sup> (A)	I <sub>sat</sub> 1 <sup>4</sup> (A)	I <sub>sat</sub> 2 <sup>5</sup> (A)	I <sub>sat</sub> 3 <sup>6</sup> (A)	I <sub>sat</sub> 4 <sup>7</sup> (A)	DCR (mΩ) @ +20 °C	K-factor <sup>8</sup>
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

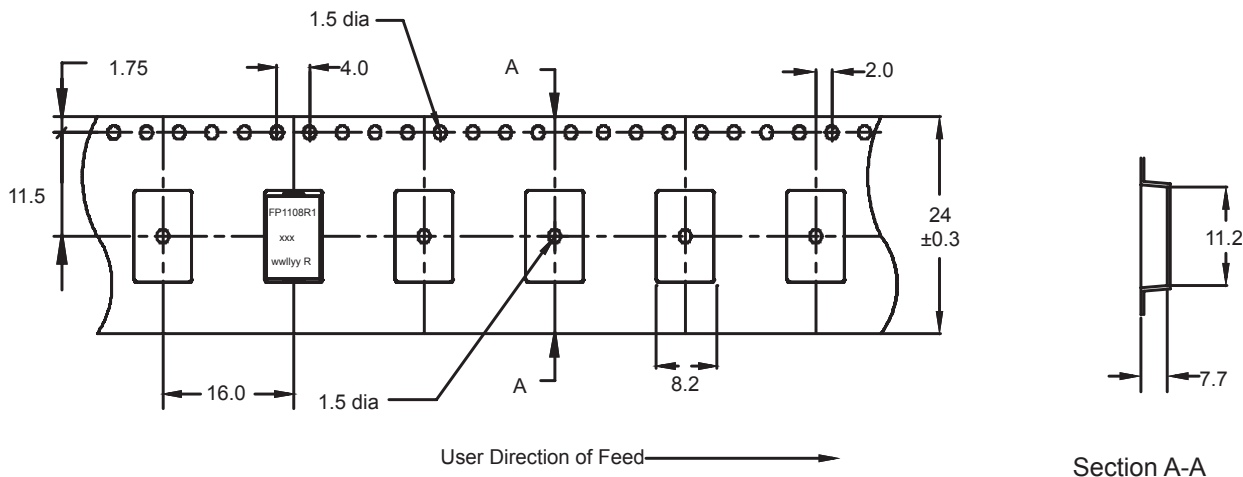
- Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.1 V<sub>rms</sub>, 0.0 Adc, +25 °C
- Full Load Inductance (FLL) Test Parameters: 100 kHz, 0.1 V<sub>rms</sub>, I<sub>sat</sub>1, +25 °C
- I<sub>rms</sub>: DC current for an approximate temperature rise of 40 °C without core loss. Derating is 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<sub>sat</sub>1: Peak current for approximately 20% (R10 10%) rolloff @ +25 °C (R10 10%)
- I<sub>sat</sub>2: Peak current for approximately 20% (R10 10%) rolloff @ +85 °C
- I<sub>sat</sub>3: Peak current for approximately 20% (R10 10%) rolloff @ +100 °C
- I<sub>sat</sub>4: Peak current for approximately 20% (R10 10%) rolloff @ +125 °C
- K-factor: Used to determine B<sub>pp</sub> for core loss (see graph). B<sub>pp</sub> = K \* L \* ΔI. B<sub>pp</sub>: (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  
 Do not route traces or vias underneath inductor

Packaging information - mm

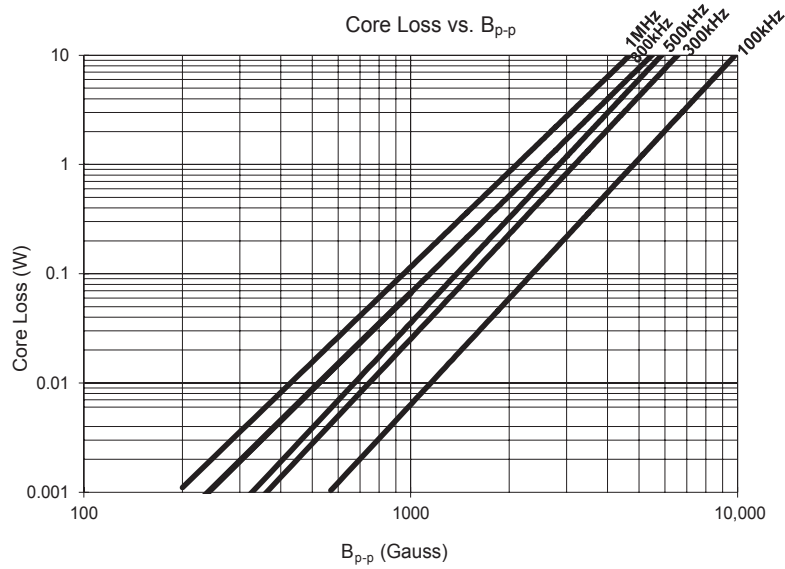


Supplied in tape and reel packaging, 500 parts per 13" diameter reel.

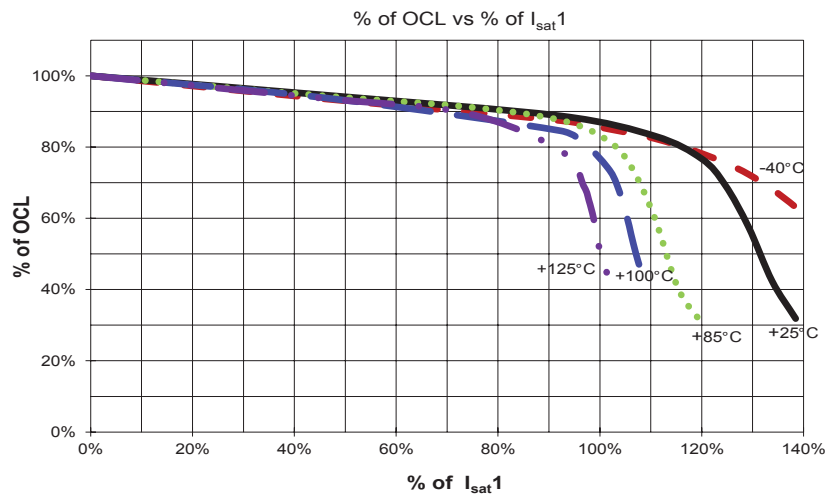
Temperature rise vs total loss



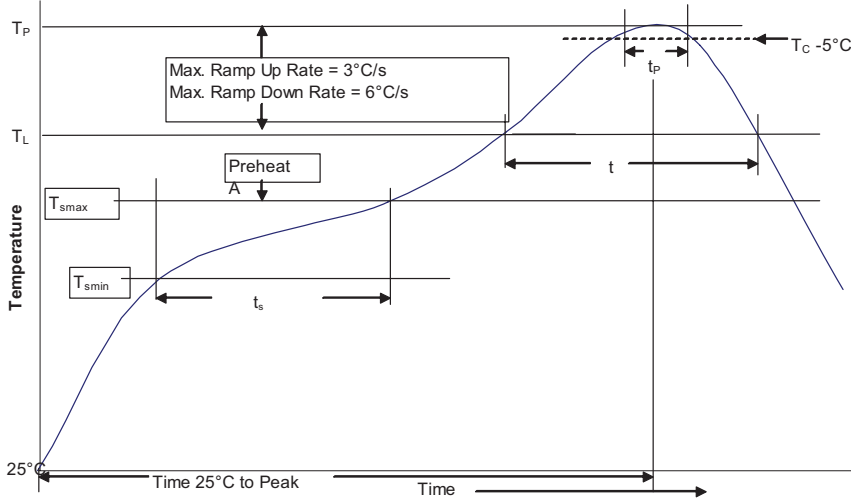
Core loss vs Bp-p



Inductance characteristics



**Solder Reflow Profile**



**Table 1 - Standard SnPb Solder ( $T_C$ )**

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

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

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ 350 - 2000	Volume $\text{mm}^3$ >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-020**

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

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

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

© 2017 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 10224 BU-SB14230  
September 2017



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.