

FP3

High current, low profile inductors



Applications

- Voltage Regulator Modules (VRMs)
- Multi-phase regulators
- Desktop and server VRMs and EVRDs
- Notebook and laptop regulators
- Battery power systems
- Graphics cards
- Point-of-load modules

Product description

- Low profile high current inductors
- Inductance range 0.1 μ H to 15 μ H
- Design utilizes high temperature iron powder alloy material with a non-organic binder to eliminate thermal aging
- 7.25 x 6.7mm footprint surface mount package in a 3.0mm height
- Magnetically shielded, low EMI
- Current rating up to 34.7Adc (Higher peak currents may be attained with a greater rolloff, see rolloff curve)
- Frequency range up to 2MHz

Environmental data

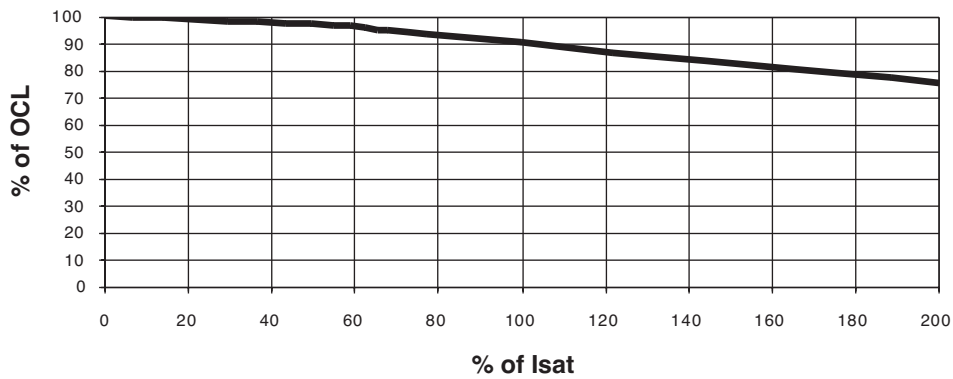
- Storage temperature range (component): -40°C to +155°C
- Operating temperature range: -40°C to +155°C (ambient plus self temperature rise)
- Solder reflow temperature: J-STD-020D



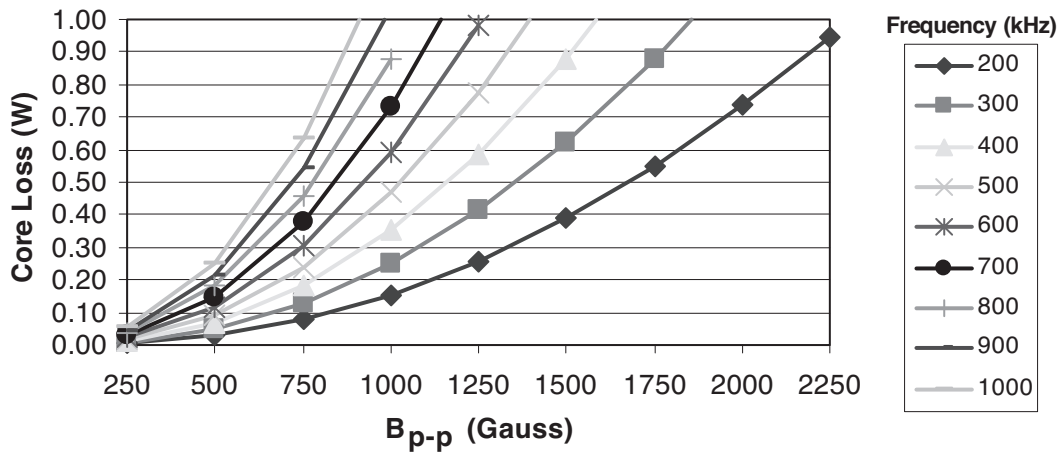
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Inductance characteristics

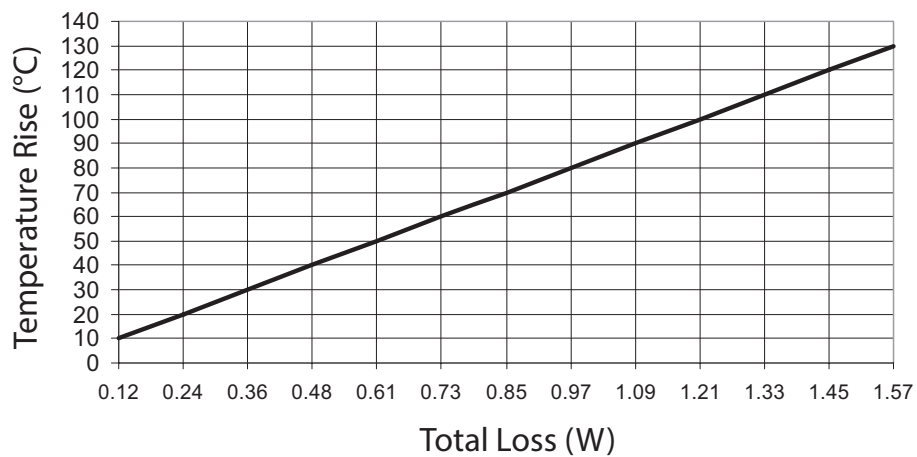
OCL vs. Isat



Core loss



Temperature rise vs. total loss



Solder reflow profile

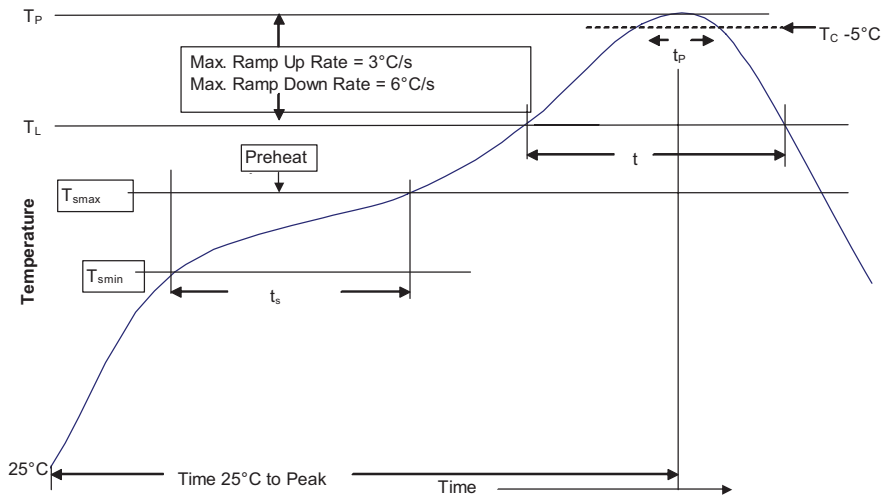


Table 1 - Standard SnPb Solder (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

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

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume 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-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)	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.

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