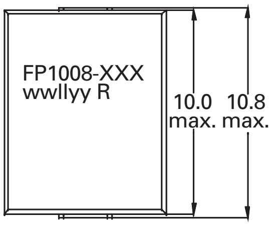
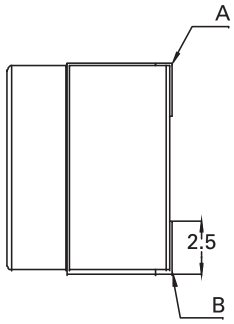
Product specifications

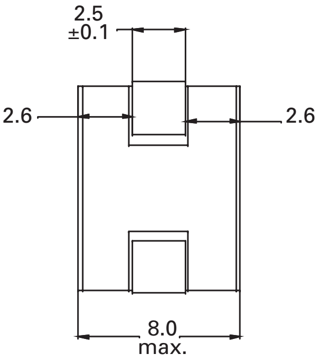
Part Number[9]	**OCL**[1] **(nH)±10%**	**FLL**[2] **(nH) minimum**	**I_{rms}**[3] **(amps)**	**$I_{sat}1$**[4] **(amps)**	**$I_{sat}2$**[5] **(amps)**	**$I_{sat}3$**[6] **(amps)**	**$I_{sat}4$**[7] **(amps)**	**DCR (mΩ) @ 20°C ±5%**	**K-factor**[8]
FP1008-120-R	120	82	63	100	95.0	91.0	82	0.17	366
FP1008-150-R	150	104	63	82	78.0	75.0	68	0.17	366
FP1008-180-R	180	130	63	64	60.8	58.6	53	0.17	366

1. Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1V_{rms}, 0.0Adc @ 25°C
2. Full Load Inductance (FLL) Test Parameters: 100kHz, 0.1V_{rms}, $I_{sat}1$
3. 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.
4. $I_{sat}1$: Peak current for approximately 20% rolloff @ 25°C
5. $I_{sat}2$: Peak current for approximately 20% rolloff @ 85°C
6. $I_{sat}3$: Peak current for approximately 20% rolloff @ 100°C
7. $I_{sat}4$: Peak current for approximately 20% rolloff @ 125°C
8. K-factor: Used to determine B_{p-p} for core loss (see graph). $B_{p-p} = K * L * \Delta I * 10^{-3}$. B_{p-p}:(Gauss), K: (K-factor from table), L: (Inductance in nH), ΔI (Peak-to-peak ripple current in Amps).
9. Part Number Definition: FP1008-xxx-R
   - FP1008= Product code and size
   - xxx= Inductance value in nH
   - “-R” suffix = RoHS compliant

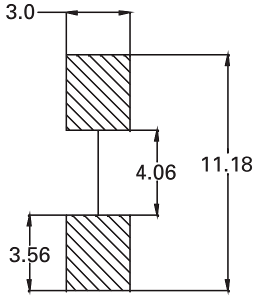
Dimensions (mm)



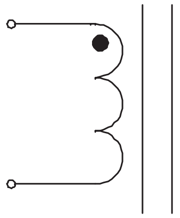


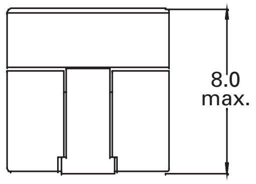


Recommended Pad Layout



Schematic





DCR measured from point “A” to point “B”
Part marking: FP1008-xxx, xxx = inductance value in nH
wwllyy = date code, R = revision level
Tolerances are ±0.205 millimeters unless stated otherwise.
All soldering surfaces to be coplanar within 0.1 millimeter
Do not route traces or vias underneath the inductor

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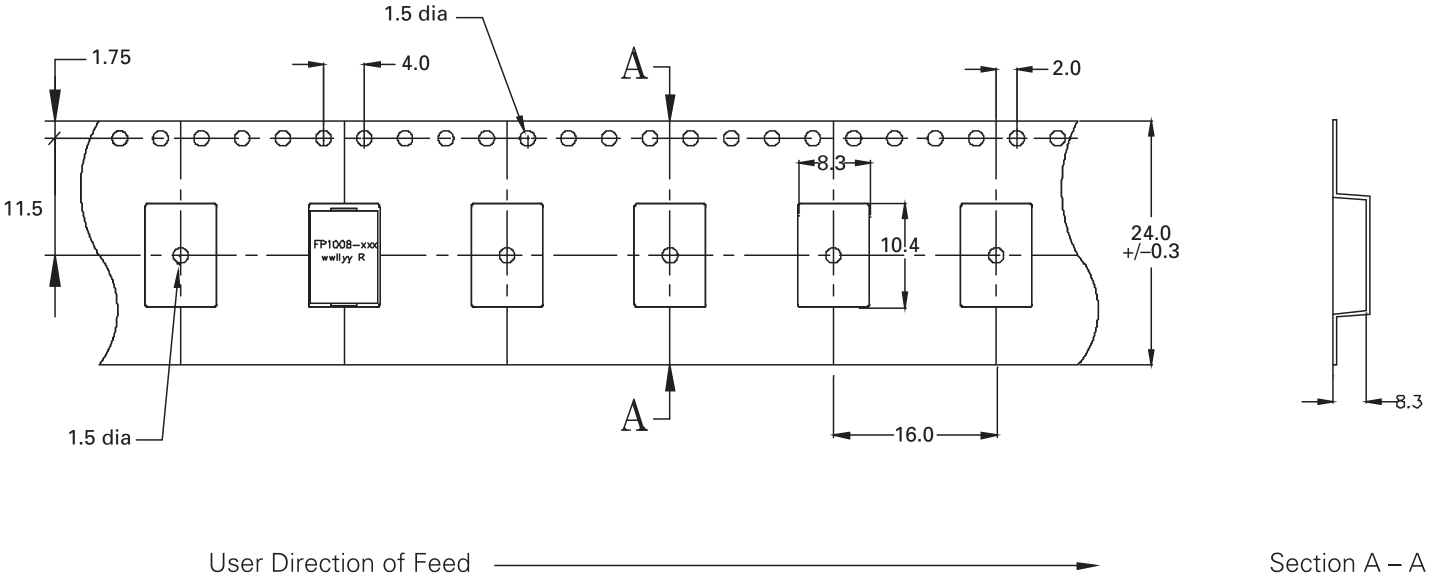
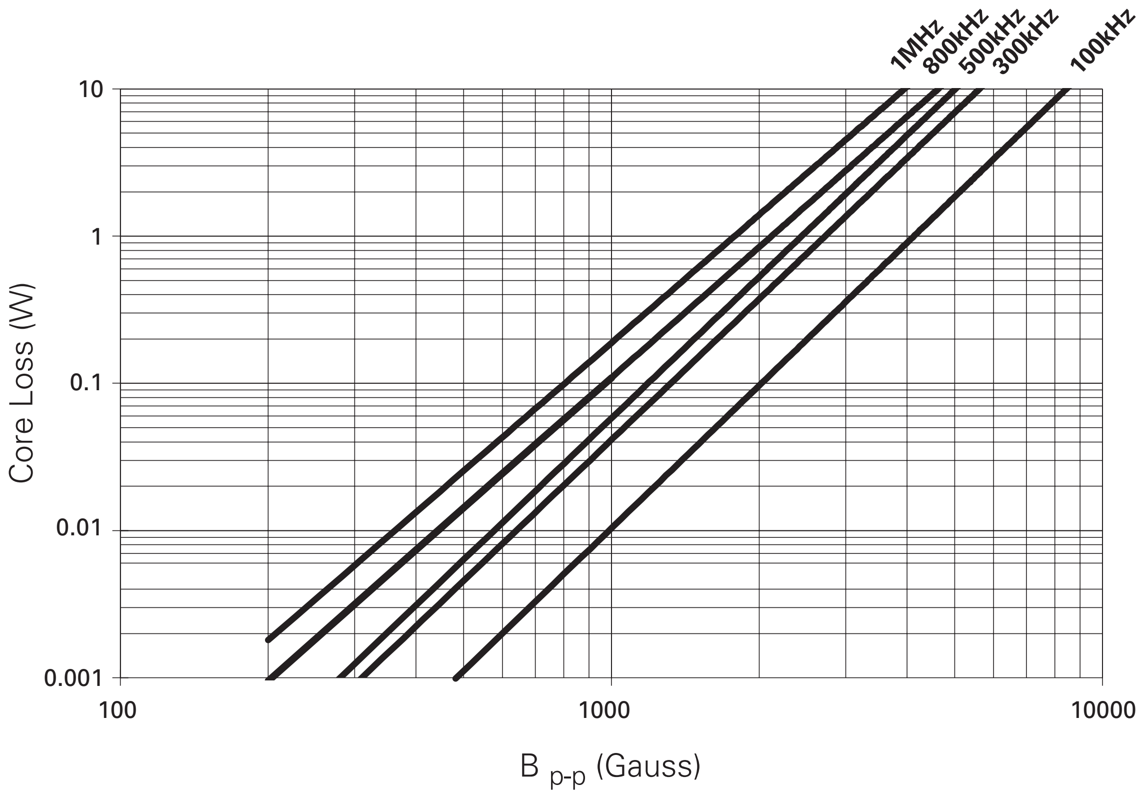
Packaging information (mm)

Supplied in tape-and-reel packaging, 350 parts on a 13” diameter reel.



Core loss vs. B p-p



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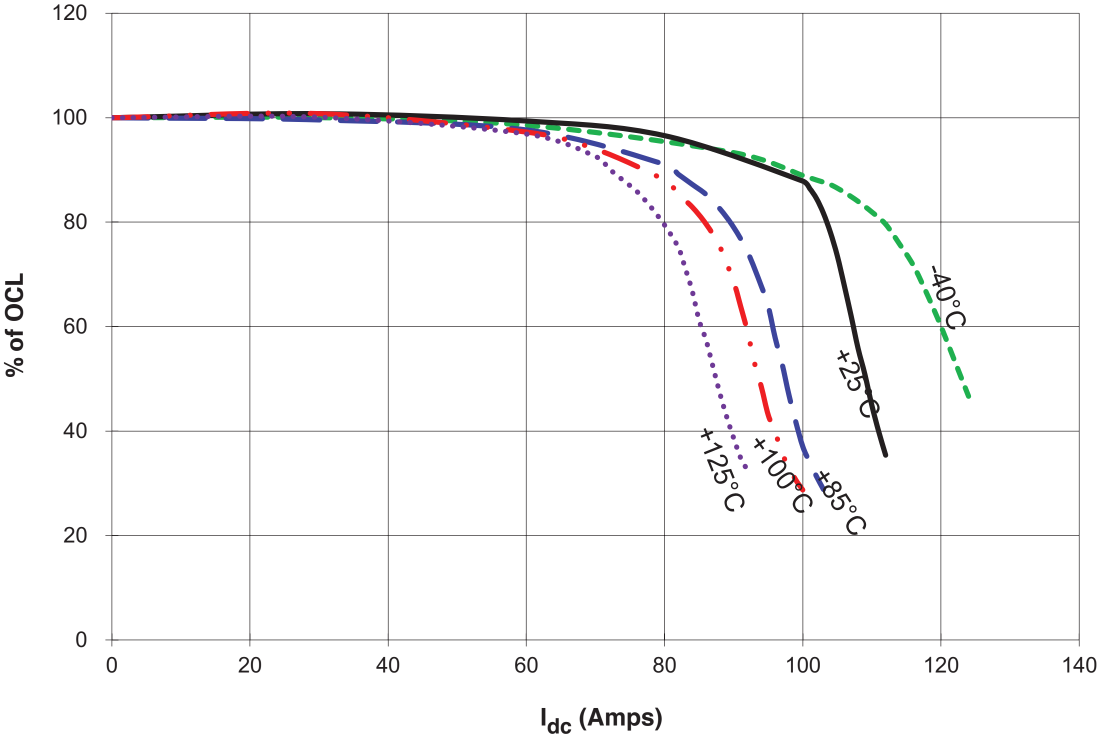
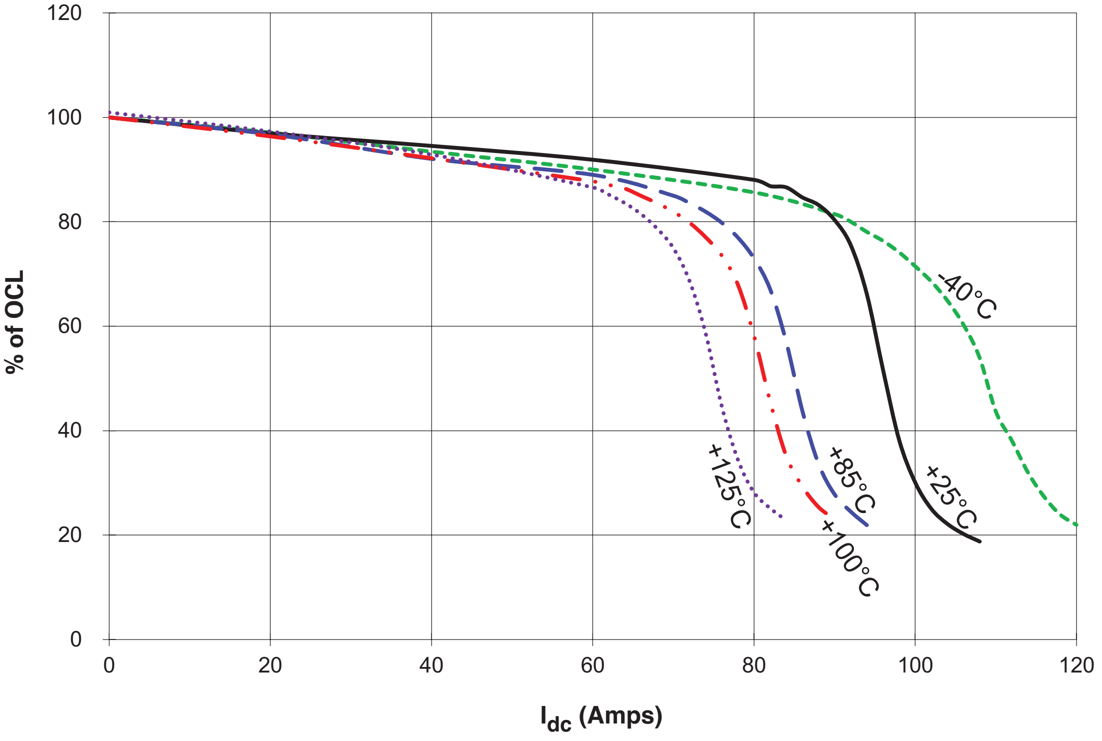
Inductance characteristics

FP1008-120-R



FP1008-150-R



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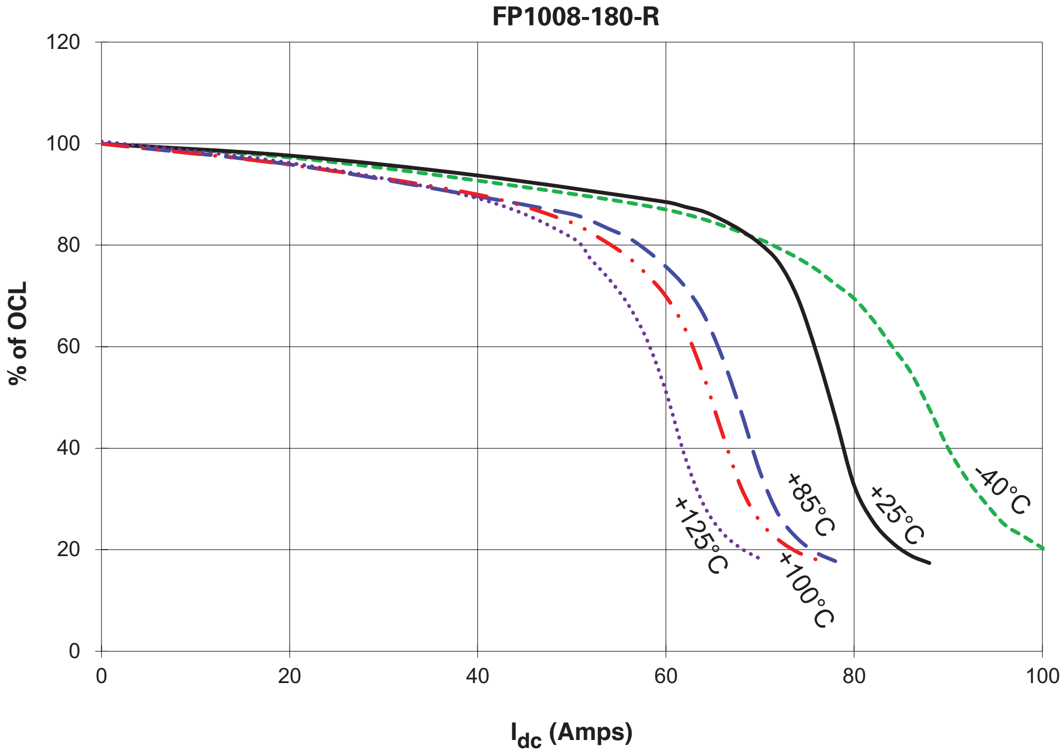
Inductance characteristics



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Solder reflow profile

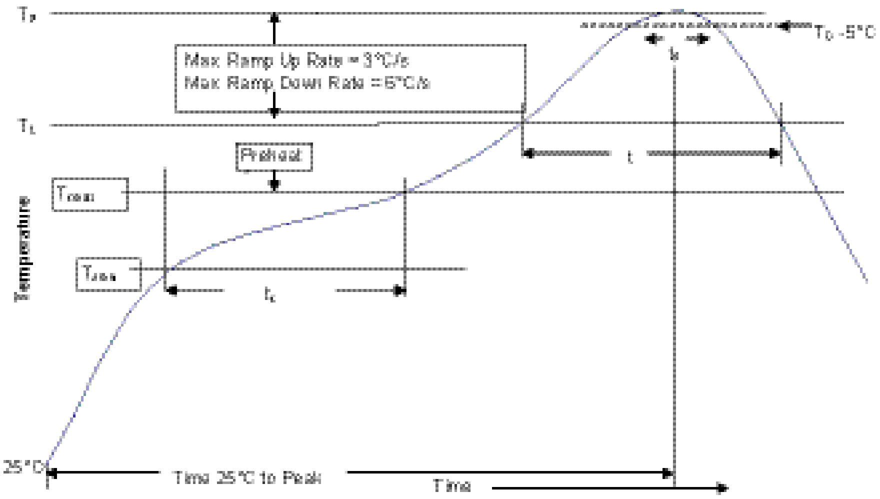

Table 1 - Standard SnPb Solder (T_c)

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

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

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >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) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 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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