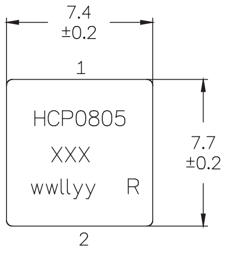
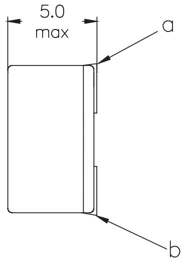
Product specifications

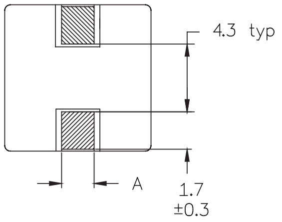
Part Number[6]	**OCL**[1] **(uH) ±20%**	**FLL**[2] **(uH) minimum**	**I_{rms}**[3] **(amps)**	**I_{sat}**[4] **(amps)**	**DCR (mΩ) ±6.0% @ 20°C**	**K-factor**[5]
HCP0805-R40-R	0.40	0.26	20	32	3.1	376
HCP0805-R68-R	0.68	0.44	17.5	25	4.5	292
HCP0805-1R0-R	1.0	0.64	14.5	22	5.8	239
HCP0805-1R5-R	1.5	0.96	13.3	18	6.8	202
HCP0805-2R2-R	2.2	1.41	10	14	11.2	175

1. Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.1Vrms, 0.0Adc @ +25°C
2. Full Load Inductance (FLL) Test Parameters: 100kHz, 0.10Vrms, @ Isat, @ +25°C
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}: Peak current for approximately 20% rolloff @ +25°C
5. K-factor: Used to determine B p-p for core loss (see graph). B p-p = K*L*ΔI, B p-p:(Gauss), K: (K factor from table), L: (Inductance in μH), ΔI (Peak to peak ripple current in Amps).
6. Part number definition: HCP0805-xxx-R
   HCP0805 = Product code and size
   XXX = Inductance value in uH, R = decimal point,
   If no R is present then last character equals number of zeroes
   -R suffix indicates RoHS compliant

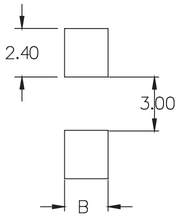
Dimensions (mm)



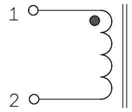




Recommended Pad Layout



Schematic

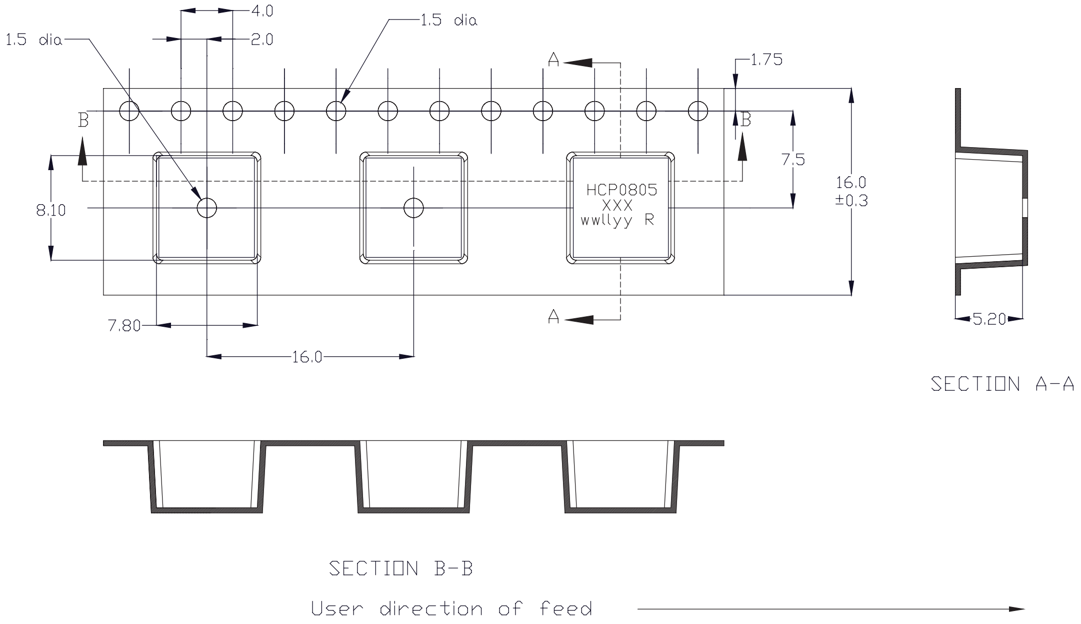


Part marking:HCP0805, XXX= Inductance value in uH, R=decimal point,
If no R is present then last character equals number of zeros
wwllyy = date code, R = revision level
Tolerances are ±0.25 millimeters unless stated otherwise
PCB tolerances are ±0.1 millimeters unless stated otherwise
DCR measured from point “a” to point “b”
Do not route traces or vias underneath the inductor

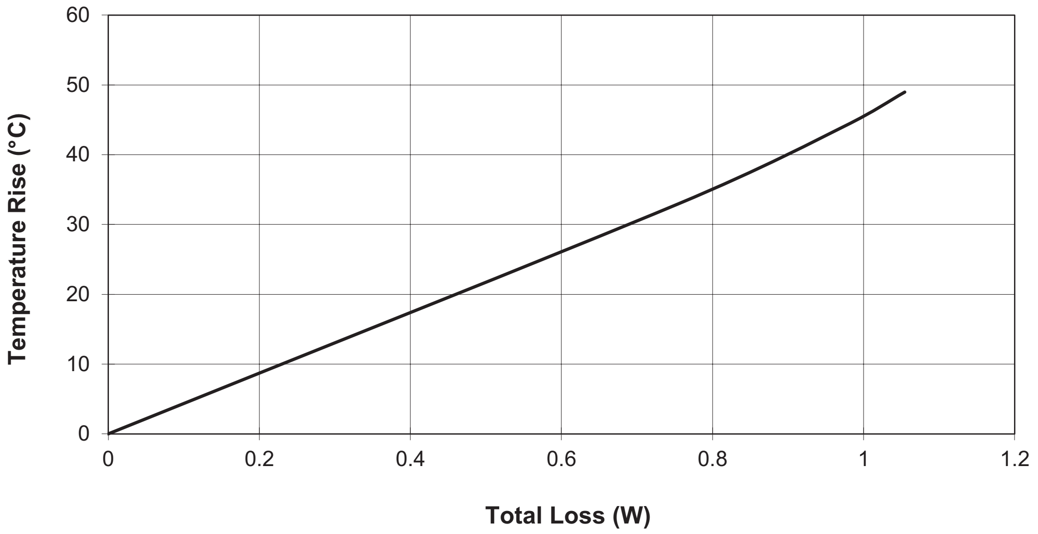
	Dimensions	
Part Number	**A (mm)**	**B (mm)**
HCP0805-R40-R	1.3 ±0.2	1.70
HCP0805-R68-R	1.1 ±0.2	1.50
HCP0805-1R0-R	1.1 ±0.2	1.50
HCP0805-1R5-R	1.1 ±0.2	1.50
HCP0805-2R2-R	0.8 ±0.2	1.20

Packaging information (mm)

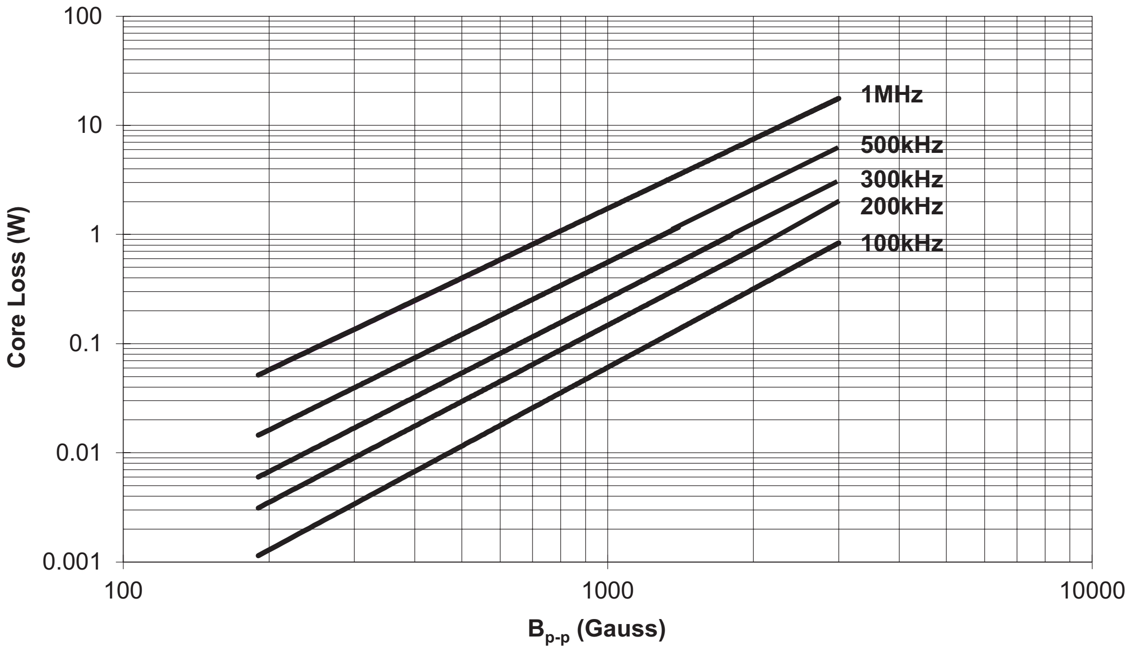
Supplied in tape and reel packaging, 700 parts per 13” diameter reel.



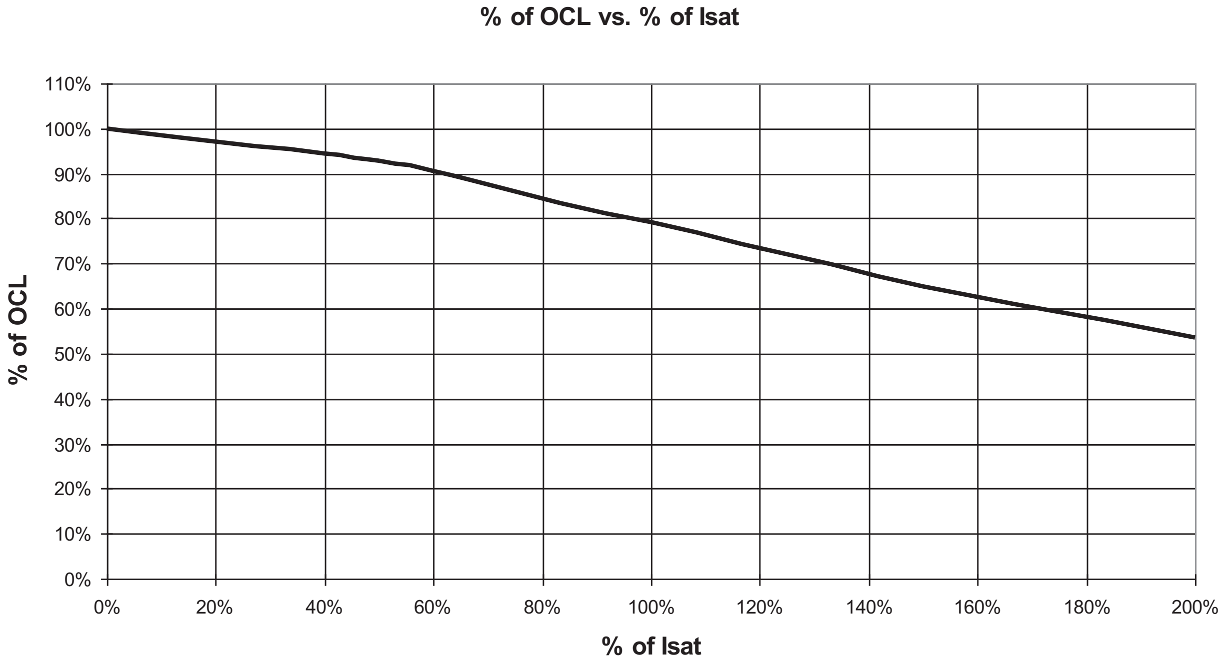
Temperature rise vs. total loss



Core loss vs B_{p-p}



Inductance characteristics



Solder reflow profile

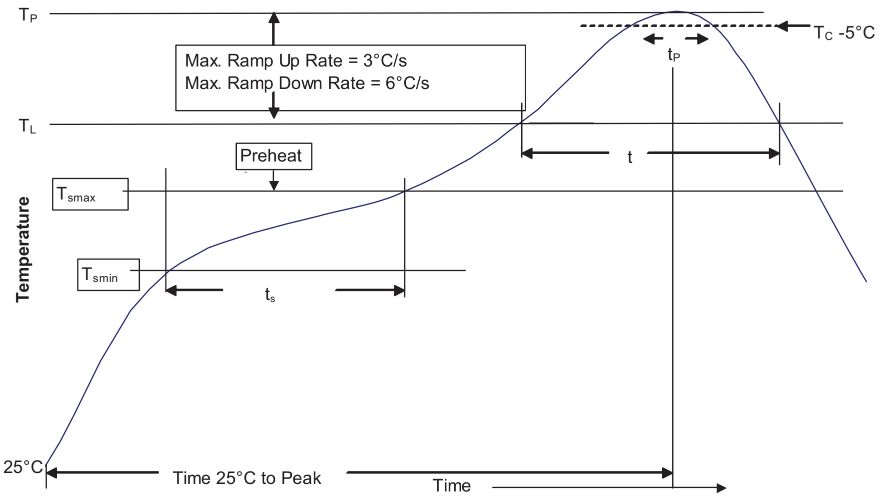


Table 1 - Standard SnPb Solder (T_C)

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 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) 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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Printed in USA
Publication 4349 BU-MC16003
January 2016

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