Power Inductors Shielded-SMT E-I 12 x 12 mm Heli-Coil

POWER INDUCTORS

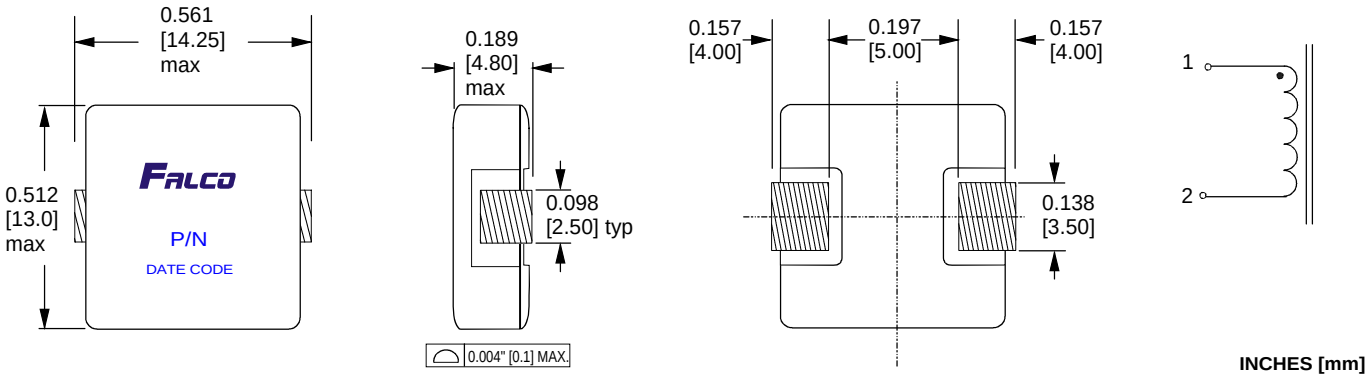
(HC1245 Series)

MAX. DIM :
L = 14.25 mm
W= 13.00 mm
H = 4.80 mm

- Used in high frequency DC/DC converters and VRMs.
- Magnetically shielded for low EMI radiation.
- Current rating up to 22.2 Amps.
- High energy storage and DC current capability.
- Compatible with vapor and IR soldering methods.
- Cost efective solution for high power requirements.
- Constructed with materials rated 155°C.
- Good inductance stability against temperature.
- Inductance range from 0.53 µH to 9.50 µ H.
- Energy storage limit of 755 µJ.
- Tape & Reel : 500 pcs/Reel, 5 Reels/Box.

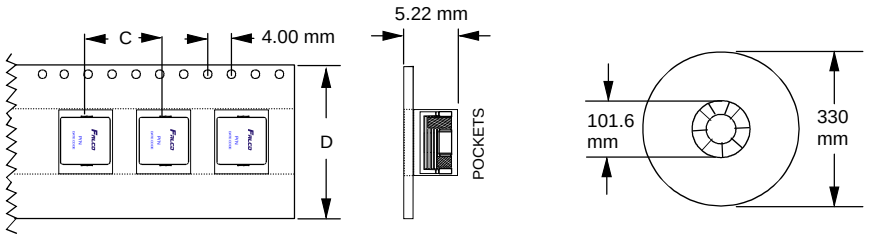
MECHANICAL SPECIFICATIONS

Top View | **Side View** | **PCB Layout (Top)** | **Schematic**



INCHES [mm]

Packaging Information — Tape & Reel



Carrier tape thickness 0.40 mm

ITEM	DESCRIPTION	QTY.
A	QTY. PER REEL	500
B	QTY PER BOX	2500
C	PITCH	20mm
D	TAPE WIDTH	24mm

See tape and reel information 63-013

ELECTRICAL SPECIFICATIONS

FALCO PART NUMBER	RoHS PART NUMBER	Inductance (µH) L_i (at 25°C) [1]	Saturation Current (A) 10% Rolloff (at 25°C) [2]	Saturation Current (A) 30% Rolloff (at 25°C) [3]	Rated Current (A) ΔT= 40°C [4]	DC Resistance (mΩ) max. (at 25°C)
HC1205		0.53 ± 30%	22.8	53.4	22.2	1.10
HC1206		1.05 ± 25%	16.3	38.2	16.4	2.05
HC1207	HC12L7	1.72 ± 25%	12.6	29.6	12.1	3.75
HC1208	HC12L8	2.57 ± 25%	10.4	24.2	10.20	5.10
HC4505	HC45L5	9.50 ± 25%	5.4	12.1	6.0	20.00

RoHS COMPLIANT PRODUCT

1. L_i = Initial inductance tested at 100 KHz 0.25 V & 0 ADC.
2. I_{SAT} = DC current value at which L_i decreases to 90% typ.
3. I_{SAT} = DC current value at which L_i decreases to 70% typ.
4. The DC current value at which ΔT of coil rises 40°C typ. over 25°C ambient.
5. Operating Temp. range -40°C to +125°C.
6. Storage Temperature Range -40°C to +85°C

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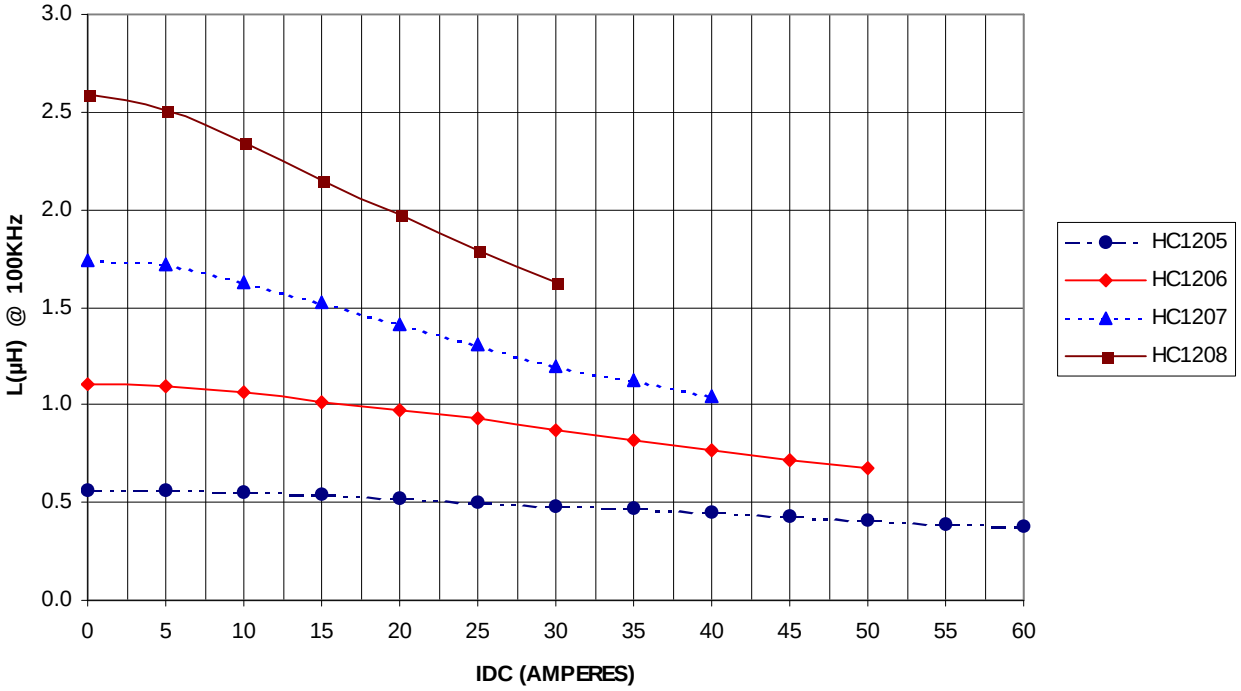
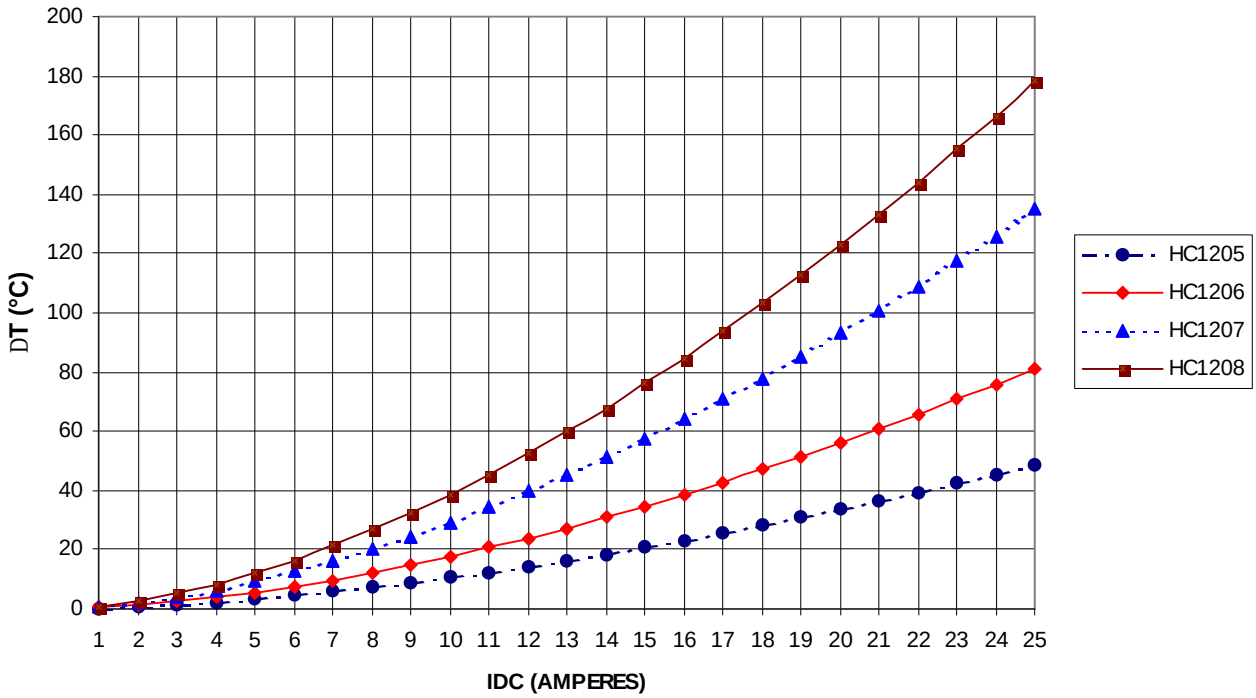
Inductance and Temperature Rise vs Current

INDUCTANCE vs CURRENT



TEMPERATURE RISE vs CURRENT



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Environmental Characteristics.

Item	Test Conditions	Acceptance Criteria	Spec Method
Thermal Shock	+85 °C to –35 °C 5 cycles	All electrical and mechanical parameters within tolerance	Mil- STD 202F Method 107D
Humidity	40°C ± 5°C by 24 hrs. R.H. 90% @ 40°C ± 2°C by 96 hrs.	All electrical and mechanical parameters within tolerance	Mil STD 202F Method 103B (Steady state)
Vibration	Simple harmonic motion with 0.03 in. (0.06 in. max) amplitude Freq: from 10 to 55 Hz transverse and back to 10 Hz in 1 minute, 120 cycles.	All electrical and mechanical parameters within tolerance	Mil-STD 202F Method 201A
Solderability	Dip pads in RMA flux 63/37 SnPb at 230°C by 5 ± 1 seconds	Wetting 90% min. of pad area	
Resistance to Soldering Heat	Reflowed on 63/37 SnPb solder paste. Solder process shall be 230°C for 20 ± 2 seconds	After exposure parts remain within the specifications	

Cautions for Use.

Abnormal Condition.
The inductor by itself does not have any protective device for abnormal operation conditions than specified here in, such as overloading, short-circuit and others.
It should be confirmed as the end product there is no risk of smoke or fire derived from the use inside unprotectives circuits.

Temperature Rise.
The temperature rise of the inductor depends on the installation conditions on the final end product. It shall be verified that the temperature conditions on the end product does not exceed the limit of the specified temperature class of the inductor.

Dielectrics Strength.
Higher applied voltage for testing of dielectric strength than specified here in will lead inductor to degradation shortennig its life.

Chemicals Solvents.
This inductor must not be used in water, solvents, potting and chemical corrosives since material degradation will occur.