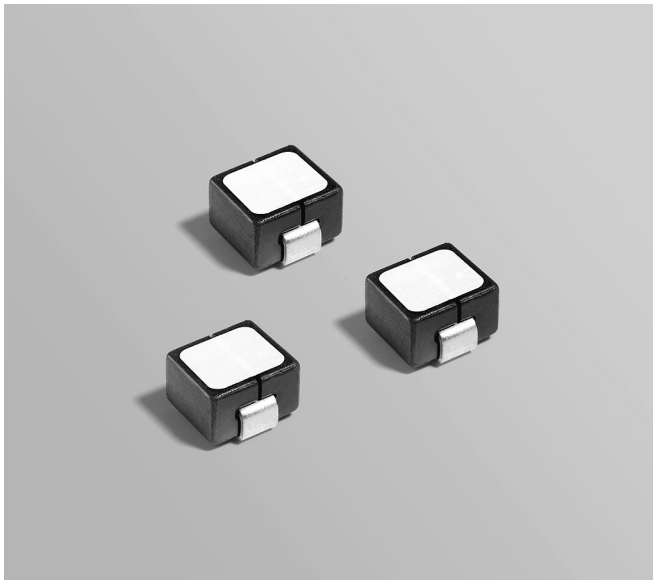
Shielded Power Inductors – HC7649



- Designed for use in multi-phase VRM/VRD regulators and high current/high frequency DC/DC converters.
- Requires only 60 mm² of board space; can handle up to 100 A

Designer's Kit C467 contains 3 each of select values.
Core material Ferrite
Core and winding loss
Terminations RoHS compliant matte tin over nickel over copper. Other terminations available at additional cost.
Weight 0.9 g
Ambient temperature –40°C to +85°C with (40°C rise) Irms current.
Maximum part temperature +125°C (ambient + temp rise).
Storage temperature Component: –40°C to +125°C. Tape and reel packaging: –40°C to +80°C
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles **Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)
Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332
Packaging 250/7″reel; 1000/13″ reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 5 mm pocket depth
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash.

Part number[1]	L ±10%[2] (nH)	DCR ±5%[3] (mOhms)	SRF typ[4] (MHz)	Isat[5] (A)	Irms (A)[6] 20°C rise	Irms (A)[6] 40°C rise
HC7649S-360KL_	36	0.17	1150	100	56	74
HC7649S-500KL_	50	0.17	900	84	56	74
HC7649S-700KL_	70	0.17	750	65	56	74
HC7649S-101KL_	100	0.17	110	42	56	74
HC7649S-121KL_	120	0.17	78	33	56	74
HC7649S-151KL_	150	0.17	67	27	56	74

1. When ordering, please specify **termination** and **packaging** code:

HC7649S-101KLC

Termination: L = RoHS compliant matte tin over nickel over copper **Special order: T** = RoHS tin-silver-copper (95.5/4/0.5) or **S** = non-RoHS tin-lead (63/37).

Packaging: C = 7″ machine-ready reel. EIA-481 embossed plastic tape (250 per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.

D = 13″ machine-ready reel. EIA-481 embossed plastic tape (1000 per full reel). Factory order only, not stocked.

2. Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4263B LCR meter or equivalent.
3. DCR is measured between the two points indicated on the dimensional drawing.
4. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent.
5. DC current at 25°C that causes a 20% (typ) inductance drop from its value without current.
6. Current that causes a 40°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Irms Testing

Irms testing was performed on 0.75 inch wide × 0.25 inch thick copper traces in still air.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

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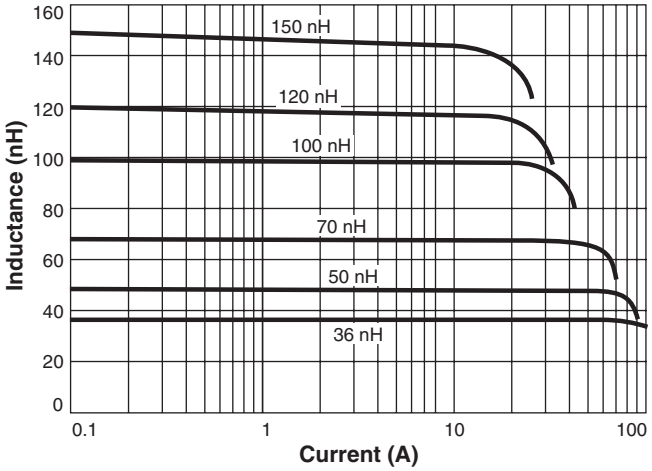
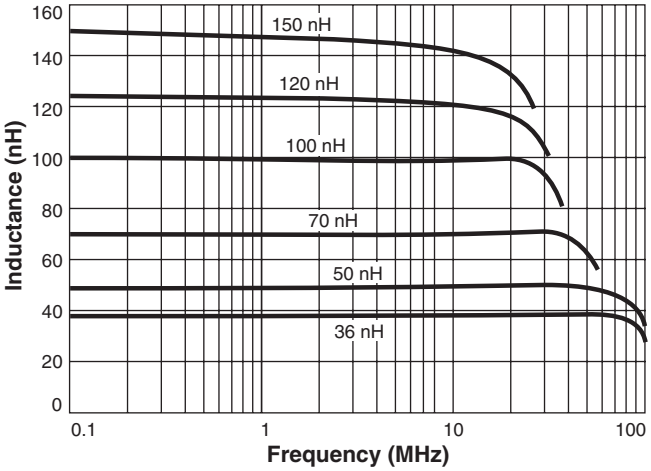
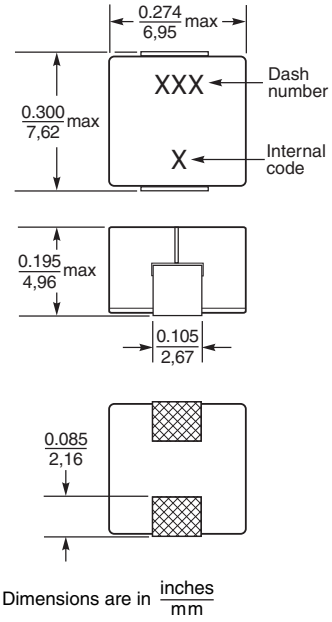
Shielded Power Inductors – HC7649 Series

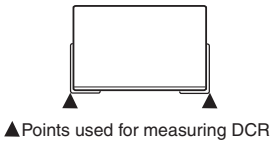
L vs Current



L vs Frequency

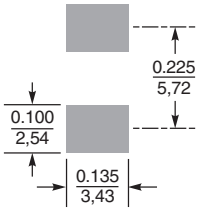






▲Points used for measuring DCR

Recommended Land Pattern



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