



Shielded Power Inductor

For NSC LM315x
SIMPLE SWITCHER®



Part number ¹	Inductance ² ±20% (µH)	DCR ±8% (mOhm)	SRF typ ³ (MHz)	Isat ⁴ (A)	Irms ⁵ (A)
HA3778-AL_	1.65	2.53	55	17	20

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

HA3778-ALC

Termination: L = RoHS compliant tin-silver 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 (100 parts 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. Factory order only, not stocked (500 parts per full reel).

2. Inductance measured at 500 kHz, 0.1 Vrms, 0 A_{dc} using a Coilcraft SMD-A fixture in an Agilent/HP 4284A LCR meter or equivalent.

3. SRF measured on an Agilent/HP 8753ES.

4. DC current at which the inductance drops 30% (typ) from its value without current.

5. 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.

6. Electrical specifications at 25°C.

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

- Designed specifically for National Semiconductor LM315x SIMPLE SWITCHER® Controllers for applications with output current up to 12 A.
- L1 on NSC Demonstration Board LM3152-3.3
- Soft saturation makes it ideal for use in multi-phase VRM/VRD regulators and high current/high frequency DC/DC converters.
- Flat wire construction for low DCR
- The materials used eliminate all thermal aging issues

Core material Powdered iron

Terminations RoHS compliant tin-silver over copper. Other terminations available at additional cost.

Weight 3.44 g

Ambient temperature -40°C to +85°C with Irms current

Maximum part temperature +125°C (ambient + temp rise).

Storage temperature Component: -40°C to +125°C.

Packaging: -40°C to +80°C

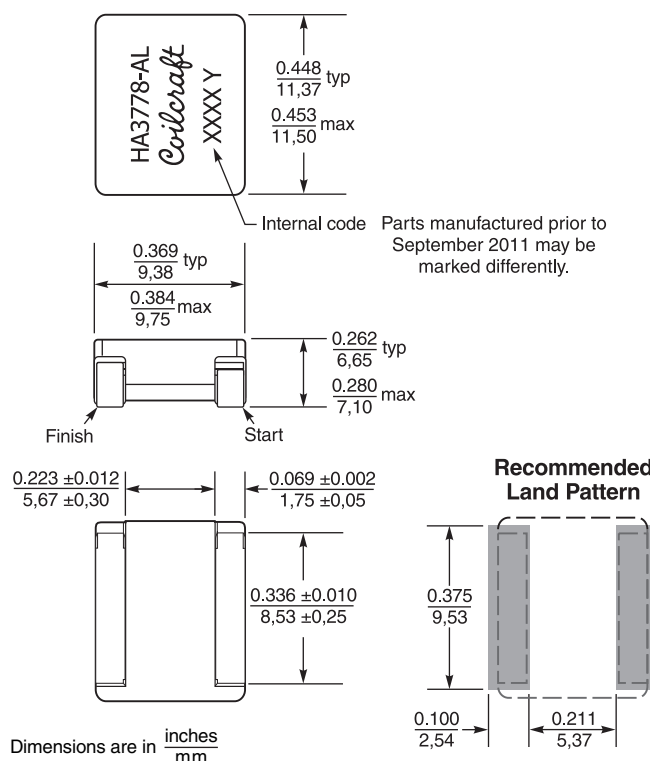
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Mean Time Between Failures (MTBF) 26,315,789 hours

Packaging 100/7" reel; 500/13" reel Plastic tape: 24 mm wide, 0.4 mm thick, 16 mm pocket spacing, 7.5 mm pocket depth

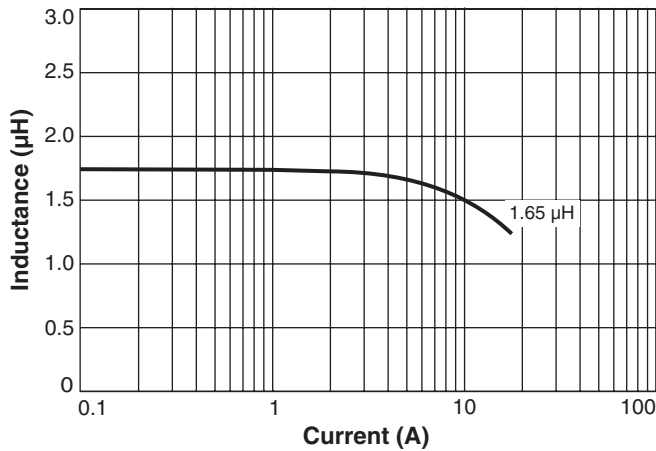
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).



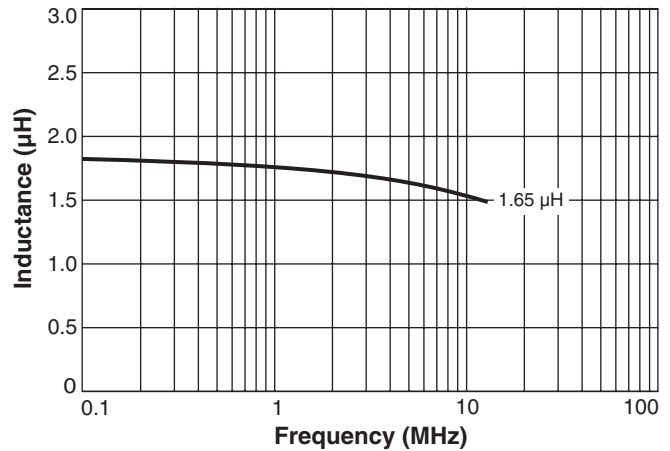


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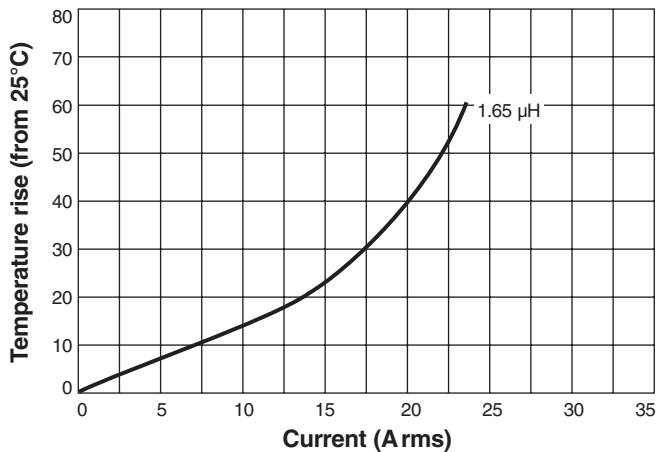
Inductance vs Current



Inductance vs Frequency



Temperature Rise vs Current



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