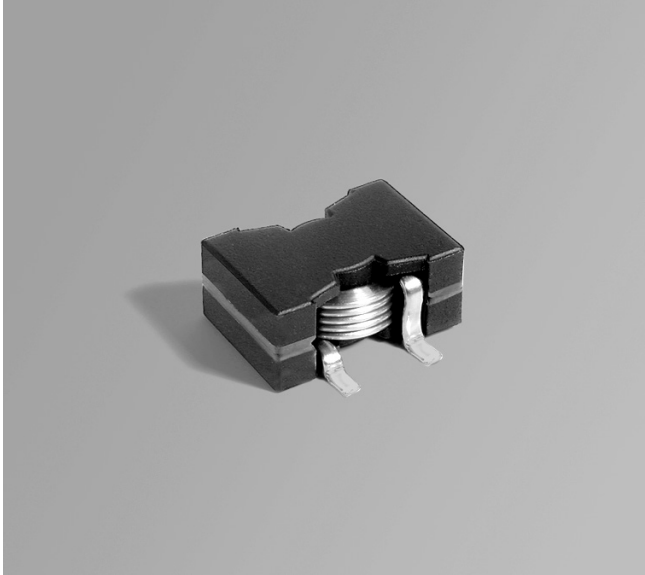




# Shielded Power Inductor

For National Semiconductor LM5115 DC Controller IC



The D1787-AL was developed for use with the National Semiconductor LM5115 Secondary Side Post Regulator Controller and LM5025 Primary Side Controller. This flat wire power inductor offers extremely low dc resistance and very high current ratings (up to 23 Arms). The flat core allows for exceptional heat dissipation and provides an excellent surface for pick and place operation.

This inductor is ideal for power supply applications where high current handling is essential and is perfect for low-voltage dc-dc converters. Custom inductance values are also possible.

Request free evaluation samples by contacting Coilcraft or visiting [www.coilcraft.com](http://www.coilcraft.com).

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS tin-silver (96.5/3.5) over copper

**Weight** 34.9 g

**Ambient temperature** -40°C to +85°C with (40°C rise) Irms current.

**Maximum part temperature** +125°C (ambient + temp rise). [Derating](#).

**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** 25 pieces per tray

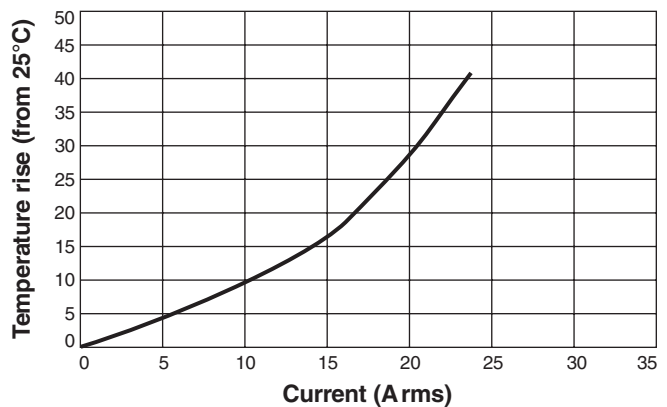
**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

Part number	Inductance <sup>1</sup> ±10% (µH)	DCR max (mOhms)	SRF typ <sup>2</sup> (MHz)	Isat <sup>3</sup> (A)	Irms <sup>4</sup> (A)
D1787-AL	33.0	2.8	9.0	8.0	23.0

- Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using Coilcraft SMD-D fixture in Agilent/HP 4284A impedance analyzer.
- SRF measured using Agilent/HP 8753D network analyzer and Coilcraft SMD-D test fixture.
- DC current at which the inductance drops 20% (typ) from its value without current. [Click for temperature derating information](#).
- Current that causes a 40°C rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information](#).
- Electrical specifications at 25°C.

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

## Temperature Rise vs Current



[www.coilcraft.com](http://www.coilcraft.com)

**US** +1-847-639-6400 [sales@coilcraft.com](mailto:sales@coilcraft.com)  
**UK** +44-1236-730595 [sales@coilcraft-europe.com](mailto:sales@coilcraft-europe.com)  
**Taiwan** +886-2-2264 3646 [sales@coilcraft.com.tw](mailto:sales@coilcraft.com.tw)  
**China** +86-21-6218 8074 [sales@coilcraft.com.cn](mailto:sales@coilcraft.com.cn)  
**Singapore** + 65-6484 8412 [sales@coilcraft.com.sg](mailto:sales@coilcraft.com.sg)

Document 484-1 Revised 09/10/15

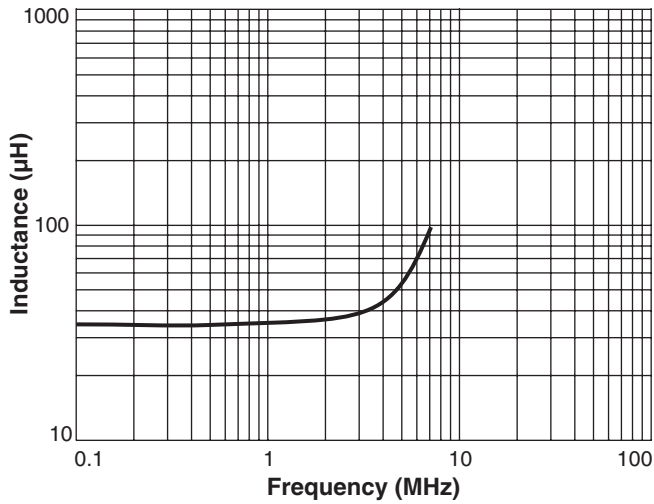
© Coilcraft Inc. 2017

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

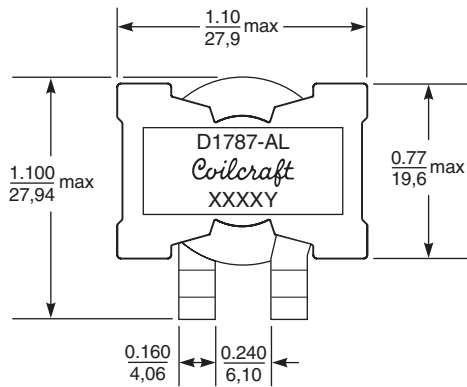
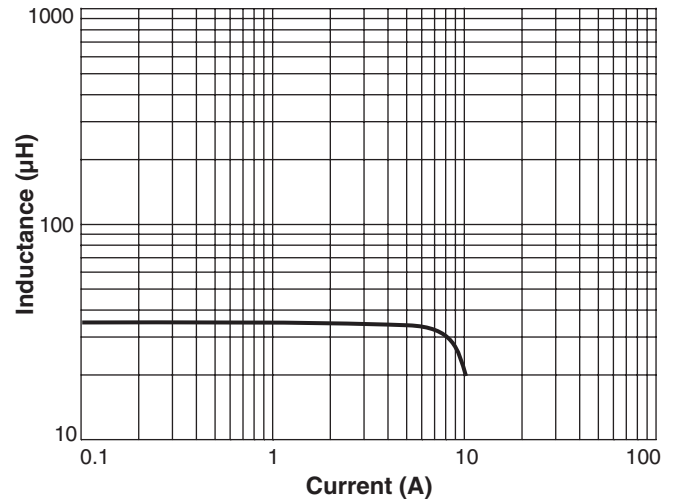


# SMT Power Inductor - D1787-AL

## Typical L vs Frequency

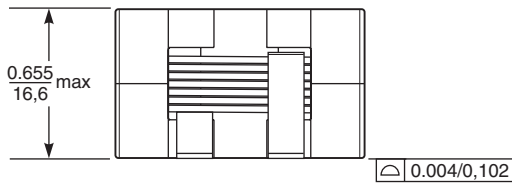
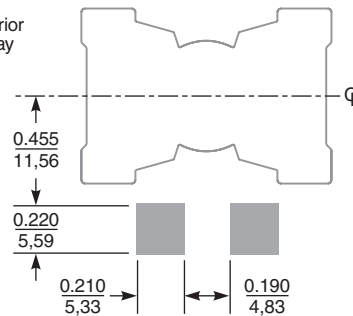


## Typical L vs Current

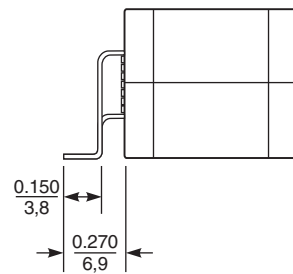


Parts manufactured prior to December 2011 may be marked differently.

### Recommended Land Pattern



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 484-2 Revised 09/10/15

© Coilcraft Inc. 2017  
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.