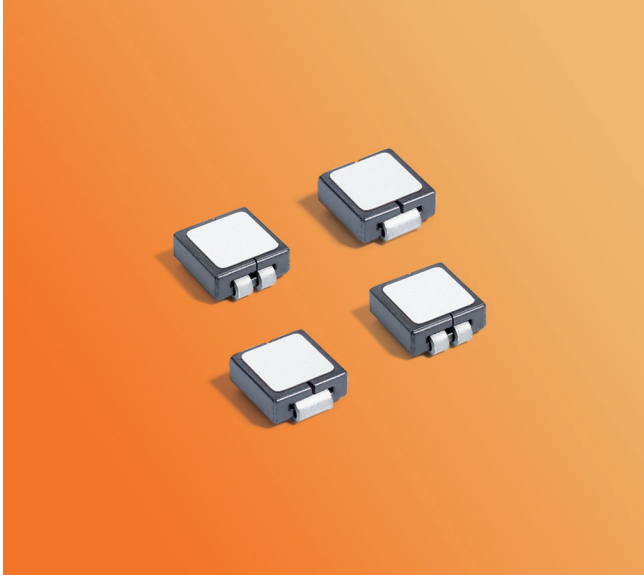


Power Inductor for Critical Applications

ST515PMM
ST515PMN



- Designed for high-speed switch mode applications
- Can be used as a 1:1 transformer or in SEPIC applications

Core material Ferrite

Terminations Matte tin over nickel over copper. Other terminations available at additional cost.

Weight 0.44 – 0.47 g

Ambient temperature –40°C to +85°C with I_{rms} current, +85°C to +125°C with derated current

Storage temperature Component: –55°C to +125°C.
Packaging: –55°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)

Packaging 500/7" reel; 1700/13" reel; Plastic tape: 16 mm wide, 0.33 mm thick, 12 mm pocket spacing, 3.12 mm pocket depth

Single Conductor

| Part number ¹ | $L \pm 20\%$ ² (μH) | $\text{DCR} \pm 5\%$ ³ (mOhms) | SRF typ ⁴ (GHz) | I_{sat} ⁵ (A) | I_{rms} ⁶ (A) |
|--------------------------|--|--|-------------------------------|-------------------------------|-------------------------------|
| ST515PMM500MLZ | 0.050 | 0.123 | 3.80 | 50 | 40 |
| ST515PMM640MLZ | 0.064 | 0.123 | 3.65 | 32 | 40 |
| ST515PMM820MLZ | 0.082 | 0.123 | 3.75 | 22 | 40 |
| ST515PMM101MLZ | 0.100 | 0.123 | 3.75 | 20 | 40 |

Dual Conductor

| Part number ¹ | Leads connected in parallel | | | | | Leads connected in series | | | | |
|--------------------------|--|--|-------------------------------|-------------------------------|-------------------------------|--|--|-------------------------------|-------------------------------|-------------------------------|
| | $L \pm 20\%$ ² (μH) | $\text{DCR} \pm 5\%$ ³ (mOhms) | SRF typ ⁴ (GHz) | I_{sat} ⁵ (A) | I_{rms} ⁶ (A) | $L \pm 20\%$ ² (μH) | DCR max ³ (mOhms) | SRF typ ⁴ (GHz) | I_{sat} ⁵ (A) | I_{rms} ⁶ (A) |
| ST515PMN500MLZ | 0.050 | 0.209 | 3.75 | 50 | 38 | 0.188 | 1.00 | 1.50 | 21 | 17 |
| ST515PMN640MLZ | 0.064 | 0.209 | 3.65 | 32 | 38 | 0.272 | 1.00 | 1.30 | 14 | 17 |
| ST515PMN820MLZ | 0.082 | 0.209 | 3.75 | 22 | 38 | 0.350 | 1.00 | 1.20 | 11 | 17 |
| ST515PMN101MLZ | 0.100 | 0.209 | 3.75 | 20 | 38 | 0.400 | 1.00 | 0.950 | 8 | 17 |

1. When ordering, specify **conductors**, **termination** and **testing** codes:

ST515PMM101KLZ

Conductors: M = Single conductor; N = dual conductor

Termination: L = Matte tin over nickel over copper

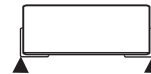
Special order: T = RoHS tin-silver-copper
(95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

2. Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4263B LCR meter or equivalent.

3. DCR is measured on a micro-ohmmeter at points indicated in the diagram.



▲ Points used for measuring DCR

4. SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft SMD-D fixture.

5. DC current at which the inductance drops 20% (typ) from its value without current.

6. Current that causes a 40°C rise from 25°C ambient.

7. Electrical specifications at 25°C.

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

SPICE models
ON OUR WEB SITE

Document ST366-1 Revised 03/07/11

Coilcraft CPS

CRITICAL PRODUCTS & SERVICES

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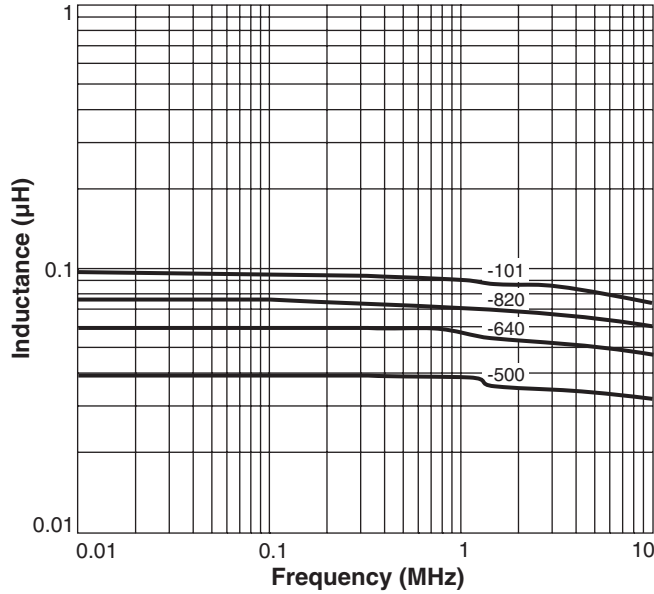
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

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

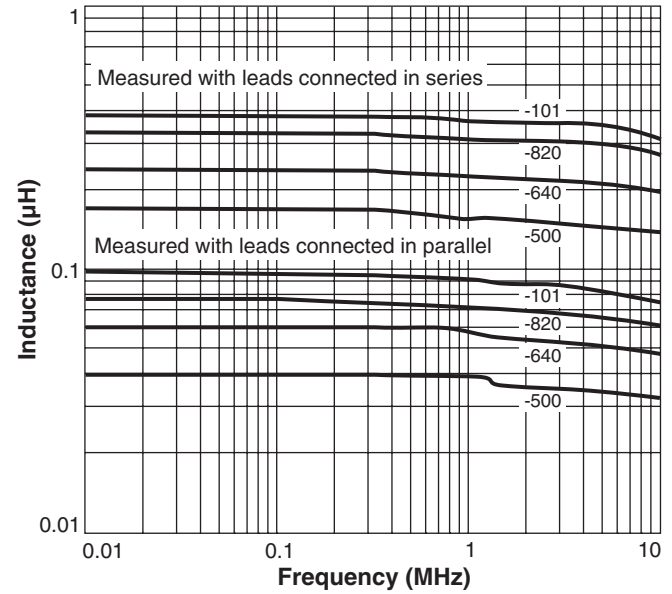
Power Inductor for Critical Applications – ST515PMM & PMN

Typical L vs Current

Single Conductor

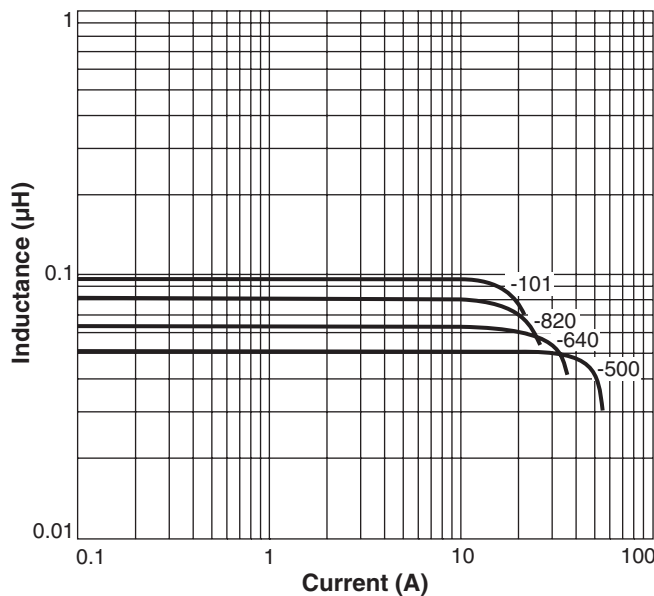


Dual Conductor

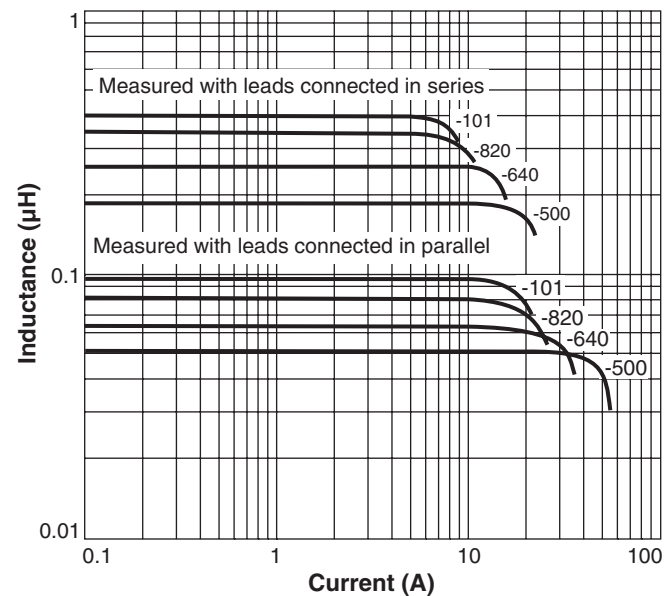


Typical L vs Frequency

Single Conductor

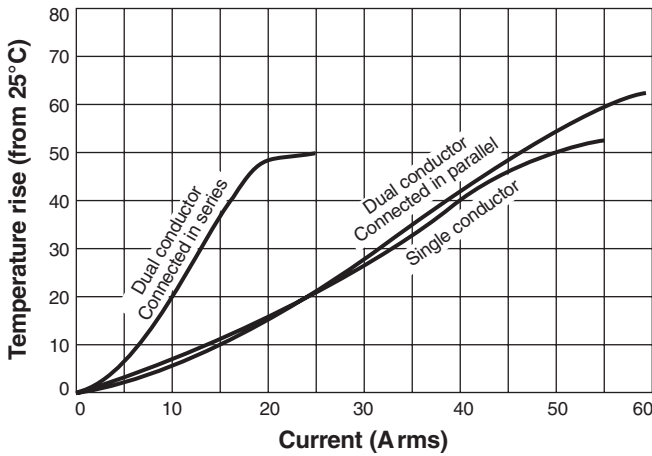


Dual Conductor

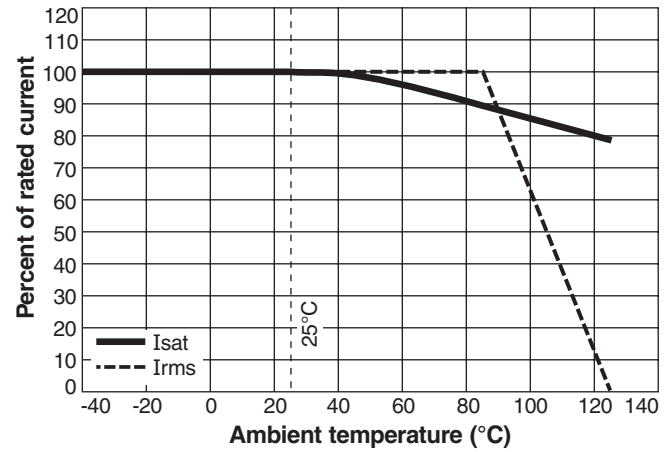


Power Inductor for Critical Applications – ST515PMM & PMN

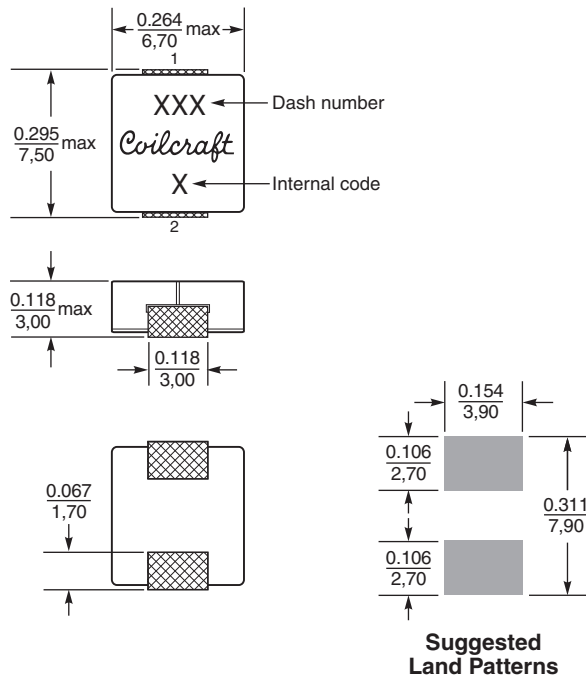
Typical Temperature Rise vs Current



Current Derating

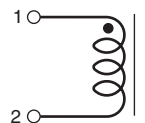


Dimensions – Single Conductor

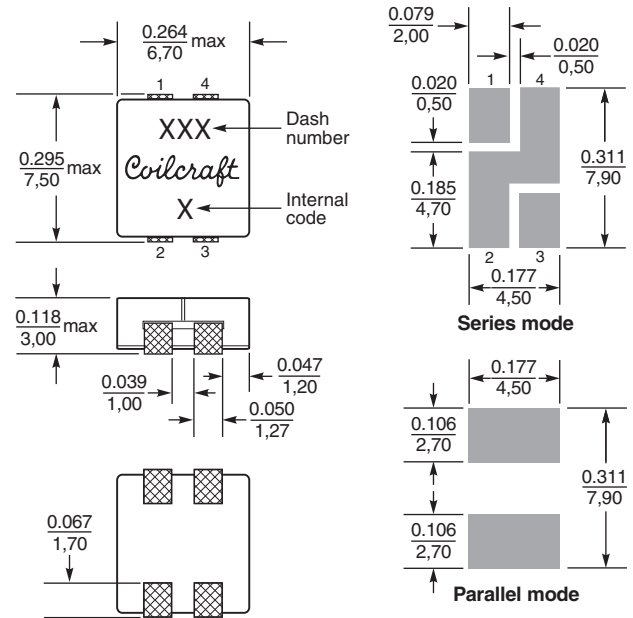


Note: Dimensions are before optional solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to the length, and 0.006 in / 0,15 mm to the height.

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

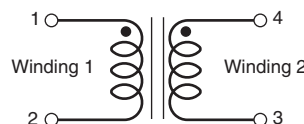


Dimensions – Dual Conductor

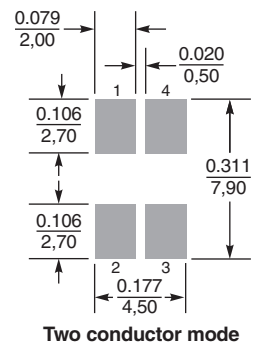


Note: Dimensions are before optional solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to the length, and 0.006 in / 0,15 mm to the height.

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



Winding-to-winding isolation:
25 V maximum



Suggested Land Patterns

