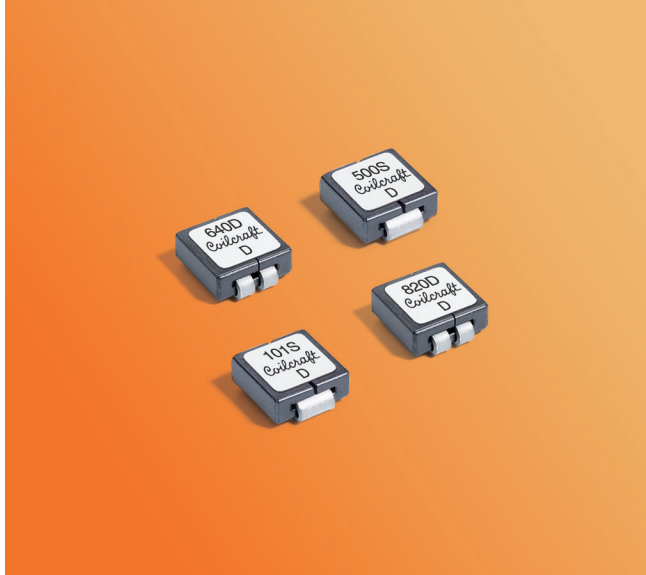


# Power Inductor for Critical Applications

ST515PMM  
ST515PMD



- 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 (40°C rise) Irms current.

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

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

Tape and reel 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; Plastic tape: 16 mm wide, 0.33 mm thick, 12 mm pocket spacing, 3.12 mm pocket depth

## Single Conductor

Part number <sup>1,7</sup>	L±20% <sup>2</sup> (µH)	DCR ±5% <sup>3</sup> (mOhms)	SRF typ <sup>4</sup> (GHz)	Isat <sup>5</sup> (A)	Irms <sup>6</sup> (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

Leads connected in parallel

Leads connected in series

Part number <sup>1</sup>	L±20% <sup>2</sup> (µH)	DCR ±5% <sup>3</sup> (mOhms)	SRF typ <sup>4</sup> (GHz)	Isat <sup>5</sup> (A)	Irms <sup>6</sup> (A)	L±20% <sup>2</sup> (µH)	DCR max <sup>3</sup> (mOhms)	SRF typ <sup>4</sup> (GHz)	Isat <sup>5</sup> (A)	Irms <sup>6</sup> (A)
ST515PMD500MLZ	0.050	0.209	3.75	50	38	0.188	1.00	1.50	21	17
ST515PMD640MLZ	0.064	0.209	3.65	32	38	0.272	1.00	1.30	14	17
ST515PMD820MLZ	0.082	0.209	3.75	22	38	0.350	1.00	1.20	11	17
ST515PMD101MLZ	0.100	0.209	3.75	20	38	0.400	1.00	0.950	8	17

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

ST515PMM101MLZ

**Conductors:** M= Single conductor; D = dual conductor

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

**Screening:** Z = Unscreened  
Y = Unscreened (SLDC Option A)  
W = Unscreened (SLDC Option B)  
H = Group A screening per Coilcraft CP-SA-10001  
G = Coilcraft CP-SA-10001 Group A (SLDC Option A)  
D = Coilcraft CP-SA-10001 Group A (SLDC Option B)  
All screening performed to the document's latest revision  
Custom screening also available

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.



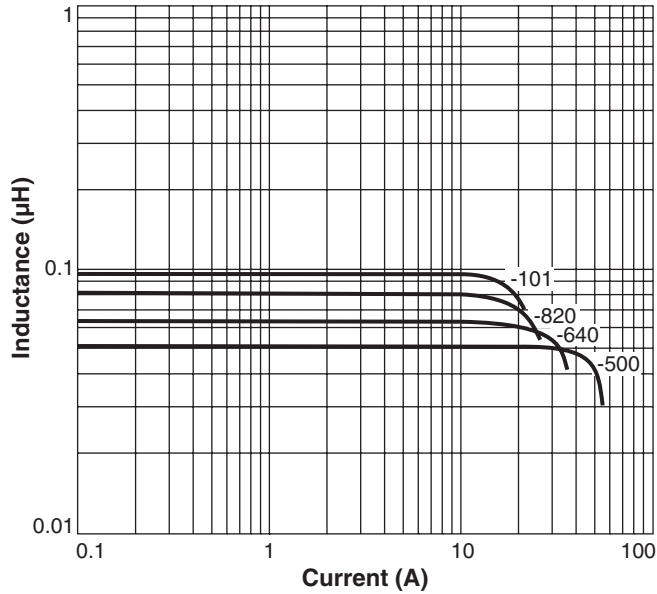
▲ Points used for measuring DCR

- SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft SMD-D fixture.
  - DC current at 25°C that causes a 20% (typ) inductance drop from its value without current.
  - Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
  - Due to the design of this component, DWV and IR shall not be specified or tested.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

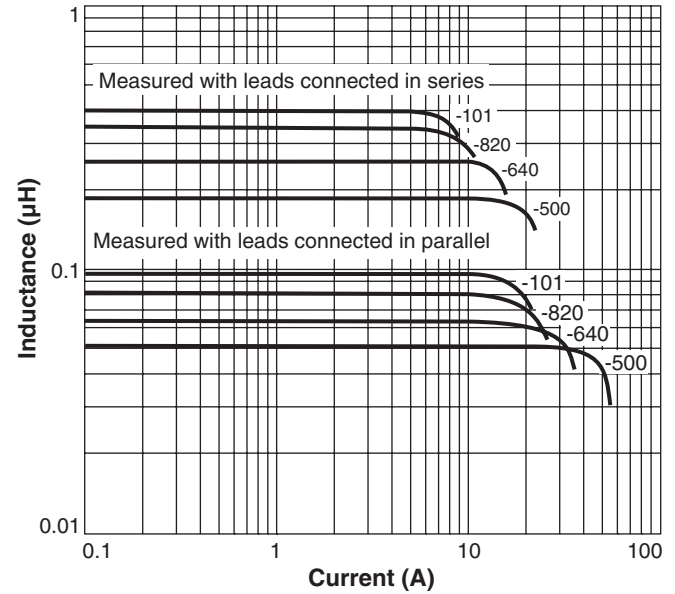
# Power Inductor for Critical Applications – ST515PMM & PMD

## Typical L vs Current

### Single Conductor

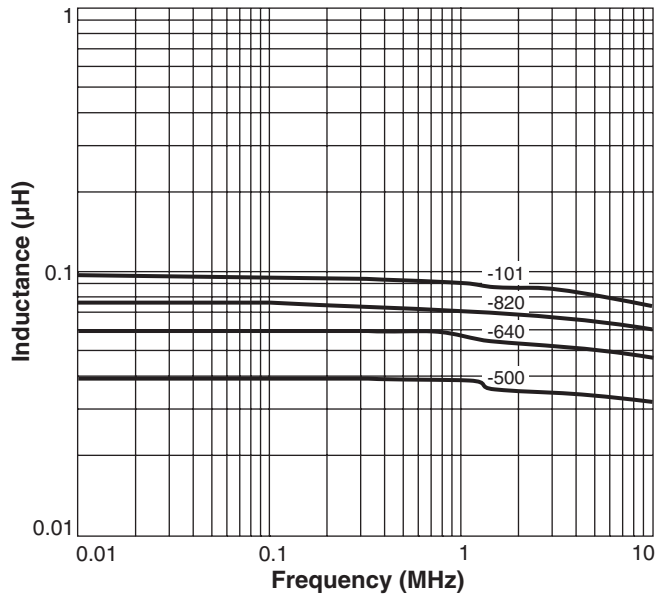


### Dual Conductor

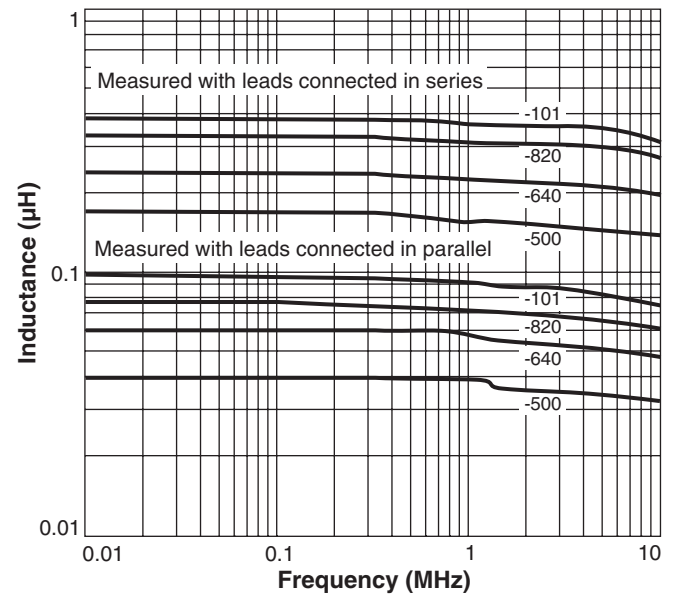


## Typical L vs Frequency

### Single Conductor



### Dual Conductor



**SPICE models**  
ON OUR WEB SITE



1102 Silver Lake Road  
Cary, IL 60013  
Phone 800-981-0363

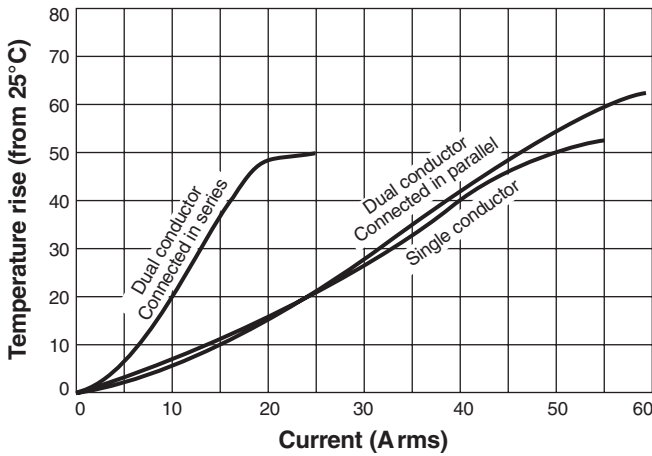
Fax 847-639-1508  
Email [cps@coilcraft.com](mailto:cps@coilcraft.com)  
[www.coilcraft-cps.com](http://www.coilcraft-cps.com)

Document ST3661-2 Revised 05/03/23

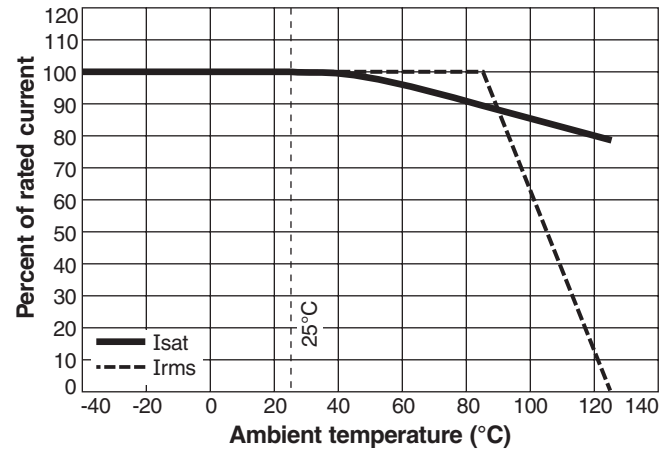
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

# Power Inductor for Critical Applications – ST515PMM & PMD

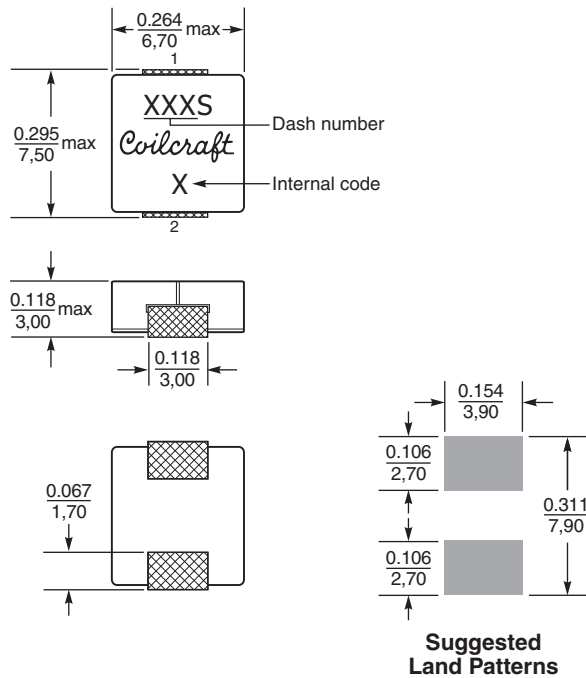
## Typical Temperature Rise vs Current



## Current Derating

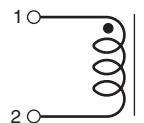


## Dimensions – Single Conductor

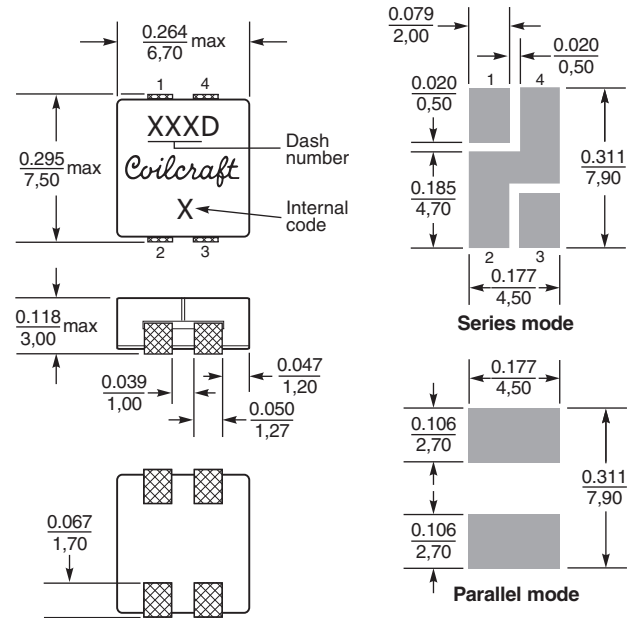


Note: Dimensions are before optional solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to the length, and 0.006 in / 0,15 mm to the height.

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

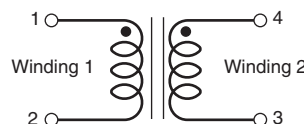


## Dimensions – Dual Conductor

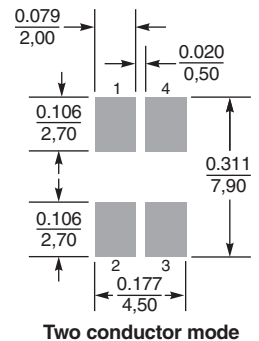


Note: Dimensions are before optional solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to the length, and 0.006 in / 0,15 mm to the height.

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



Winding-to-winding isolation:  
25 V maximum



Suggested Land Patterns



CRITICAL PRODUCTS & SERVICES

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