

# Power Inductor for Critical Applications ST631PYA



- Exceptionally low DCR – 6.8 mOhm
- Soft saturation makes them ideal for VRM/VRD applications.

**Terminations** Tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.

**Core material** Composite

**Weight** 18.7 g

**Ambient temperature** –40°C to +105°C with Irms current

**Maximum part temperature** +155°C (ambient + temp rise).

**Storage temperature** Component: –55°C to +155°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** 100/13" reel Plastic tape: 32 mm wide, 0.35 mm thick, 24 mm pocket spacing, 13.26 mm pocket depth.

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (μH)	DCR (mOhms) <sup>3</sup>		SRF (MHz) <sup>4</sup>		Isat (A) <sup>5</sup>	Irms (A) <sup>6</sup>	
		typ	max	min	typ		20°C rise	40°C rise
ST631PYA153MLZ	15	6.8	7.5	6.4	8.0	25.5	16	22

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

↓  
**ST631PYA153MLZ**

**Termination:** L = Tin-silver (96.5/3.5) over copper.  
Special order:  
T = Tin-silver-copper (95.5/4/0.5) or  
S = Tin-lead (63/37).

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 4395A or equivalent.
5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.
6. Current that causes the specified 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.

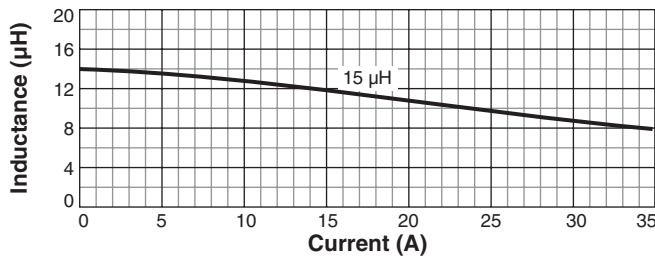
## Irms Testing

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

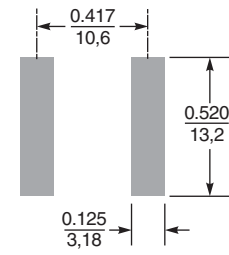
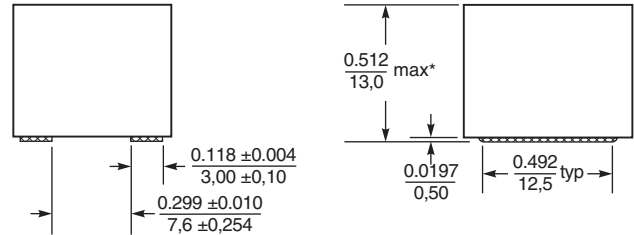
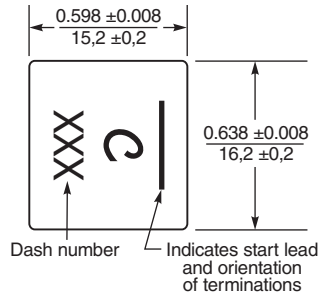
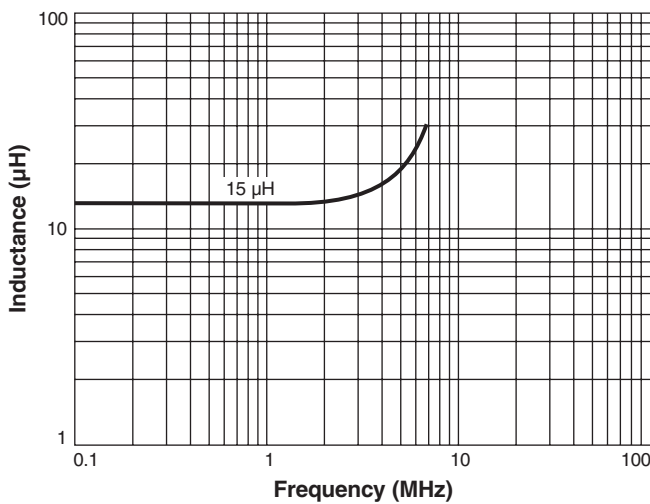
Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

# ST631PYA153 Power Inductor

## L vs Current



## L vs Frequency



**Suggested Land Pattern**

\* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

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