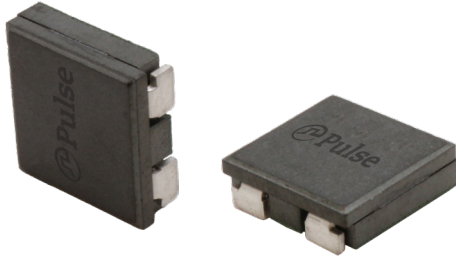


# SMT Power Inductor

PSiP Power Bead - PGL6478.XXXHL Series



- Designed for PSiP Power Supply
- Height:** 3.55mm Max
- Footprint:** 10.05mm x 10.05mm Max
- Current Rating:** up to 33A
- Inductance Range:** 120nH to 280nH

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

| Part Number    | Inductance <sup>1</sup><br>@0A DC<br>nH±15% | Inductance <sup>2</sup><br>@Irated<br>(nH TYP) | Irated <sup>3</sup><br>(A) | DCR <sup>4</sup><br>(mΩ) | Saturation Current <sup>5</sup> |        |        | Heating Current<br>(A TYP) | Height<br>(mm) |
|----------------|---------------------------------------------|------------------------------------------------|----------------------------|--------------------------|---------------------------------|--------|--------|----------------------------|----------------|
|                |                                             |                                                |                            |                          | @25°C                           | @100°C | @125°C |                            |                |
| PGL6478.121HLT | 120                                         | 117                                            | 45                         | 0.45±15%                 | 62                              | 45     | 44     | 33                         | 3.3±0.25       |
| PGL6478.141HLT | 140                                         | 132                                            | 37                         |                          | 51                              | 37     | 36     |                            | 3.3±0.25       |
| PGL6478.171HLT | 170                                         | 162                                            | 31                         |                          | 44                              | 31     | 30     |                            | 3.3±0.25       |
| PGL6478.221HLT | 220                                         | 212                                            | 24                         |                          | 36                              | 24     | 23     |                            | 3.3±0.25       |
| PGL6478.281HLT | 280                                         | 260                                            | 15                         |                          | 23                              | 15     | 14     |                            | 3.3±0.25       |

### Notes

- Inductance measured at 100KHz, 0.1V
- Inductance at Irated is the value of the inductance at @25°C at the listed rated current
- The rated as listed is either the saturation current (25°C or 100°C) or the heating current depending on which value is lower.
- The nominal DCR is measured from point ① to point ②
- The saturation current is the current which causes the inductance to drop by approximately 20% at the stated ambient temperatures (25°C, 100°C, 125°C). This current is determined by placing the component in the specified ambient environment and applying a short duration Pulse current (to eliminate self-heating effects) to the component.
- The heating current is the DC current which causes the part temperature to increase by approximately 40°C when used in a typical application.
- In high volt\*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. To determine the approximate total loss (or temperature rise) for a given application, the core loss and temperature rise curves can be used.
- Parts with the HLT suffix are sold in tape and reel packaging. Pulse complies to industry standard tape and reel specification EIA-481. The tape and reel for this product has a width (W=24), pitch (P0=16mm) and depth (Ko=3.4mm). Samples of these parts can be ordered by removing the HLT suffix and replacing with HL.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

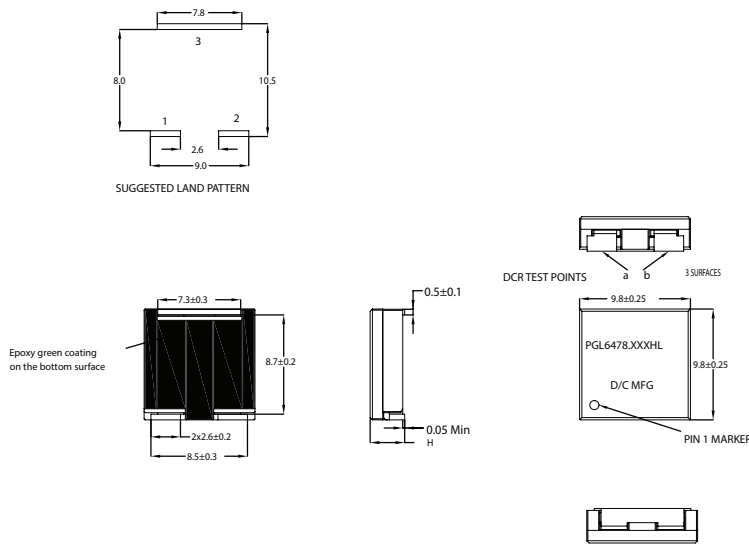
# SMT Power Inductor

PSiP Power Bead - PGL6478.XXXHL Series

## Mechanical

## Schematics

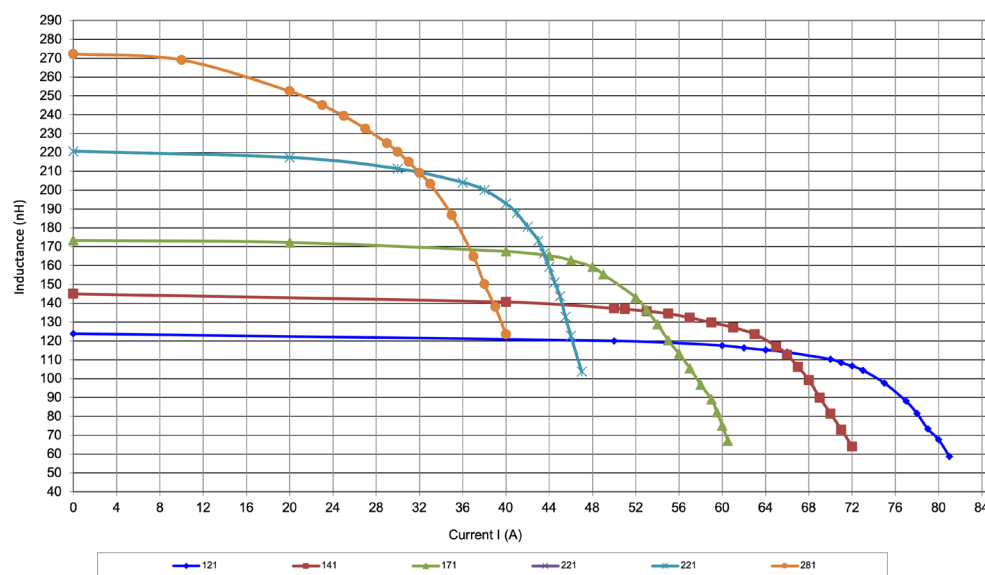
### PGL6478.XXXHLT



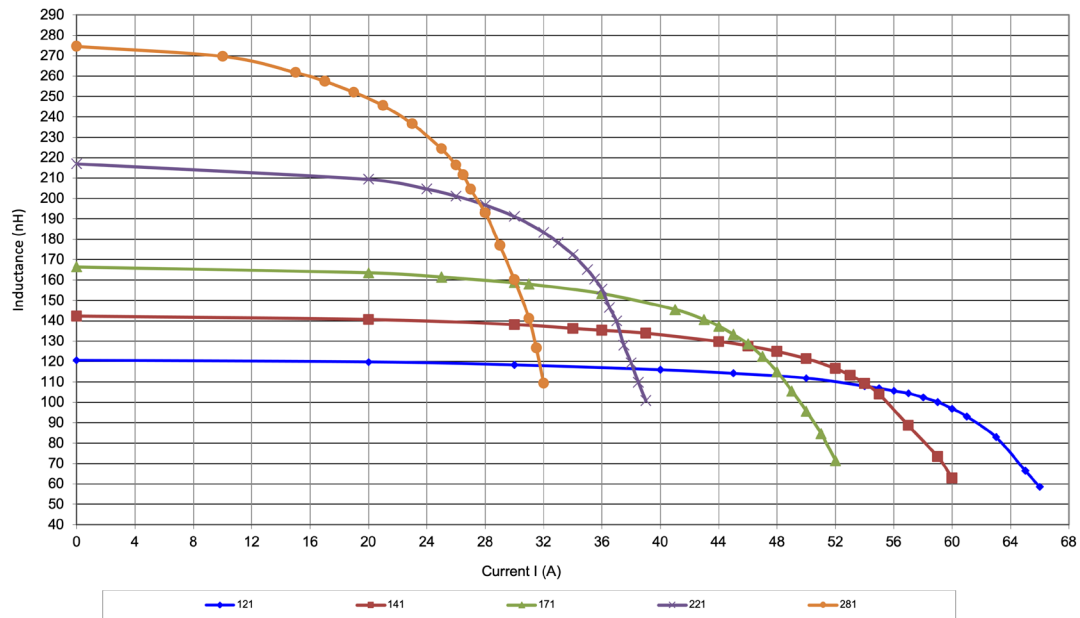
Weight.....1.4grms  
Tape & Reel.....1000/Reel  
Dimensions: mm

## Typical Performance Curves

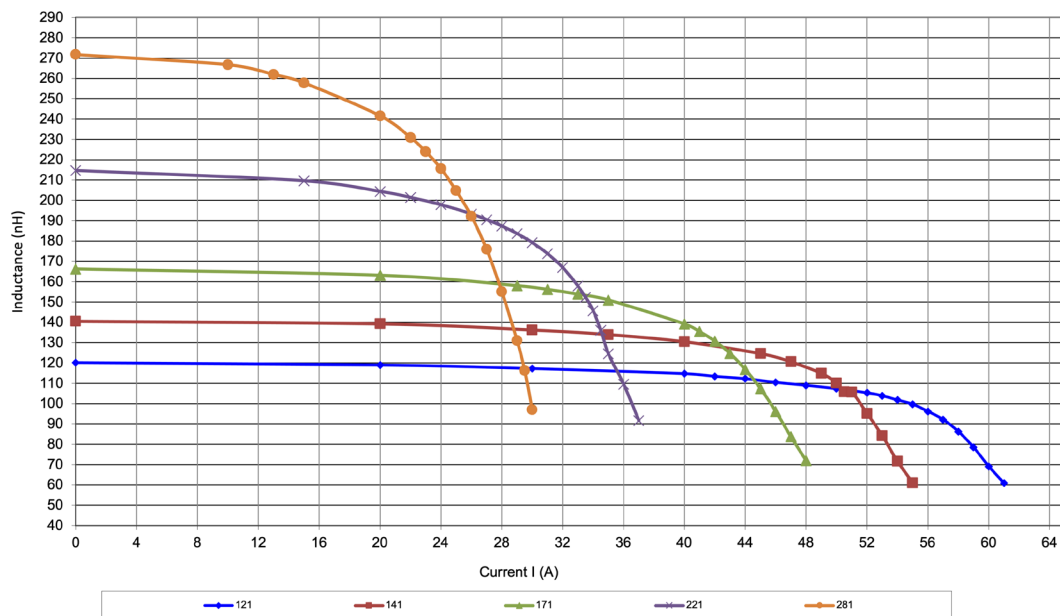
PGL6478.XXXHL L vs I curve 25°C



PGL6478.XXXHL L vs I curve 100°C



PGL6478.XXXHL L vs I curve 125°C

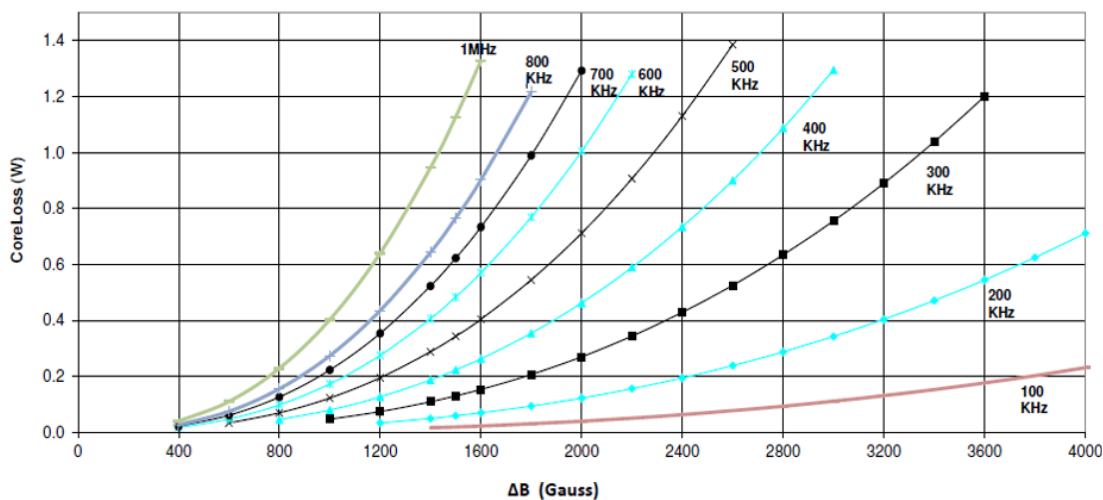


# SMT Power Inductor

PSiP Power Bead - PGL6478.XXXHL Series

## Core Loss

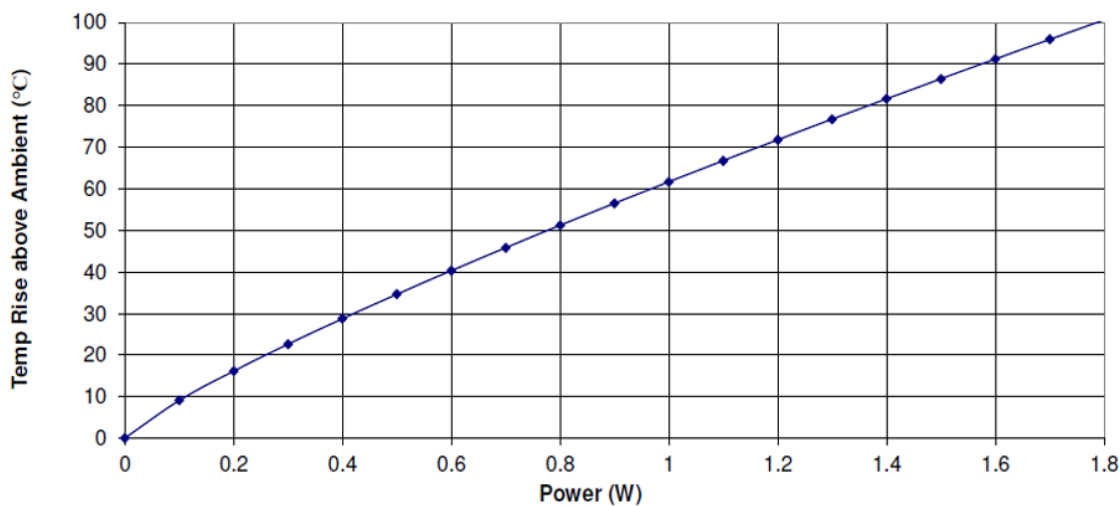
PGL6478.XXXHL Core Loss



$$\text{Where } \Delta B = 0.46 * L(\text{nH}) * \Delta I$$

## Temp Rise vs Power Dissipation

PGL6478.XXXHL Temp Rise



$$\text{Total Power Dissipation (W)} = \text{CopperLoss} + \text{CoreLoss}$$

$$\text{CopperLoss} = I_{\text{rms}}^2 * R_{\text{dc}}(\text{mOhms}) / 1000$$

$$\text{CoreLoss} = (\text{from table})$$

## For More Information:

Americas - [prodinfo\\_power\\_americas@yageo.com](mailto:prodinfo_power_americas@yageo.com) | Europe - [prodinfo\\_power\\_emea@yageo.com](mailto:prodinfo_power_emea@yageo.com) | Asia - [prodinfo\\_power\\_asia@yageo.com](mailto:prodinfo_power_asia@yageo.com)

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2022. Pulse Electronics, Inc. All rights reserved.