

# SMT POWER INDUCTORS

## Shielded Drum Core - PL92XX Series



-  **Height:** 0.201 inches (5.1mm) Max
-  **Footprint:** 0.413 inches x 0.413 inches (10.5mm x 10.5mm) Max
-  **Inductance Range:** 0.95µH to 890µH
-  **Current Rating:** up to 8.7A

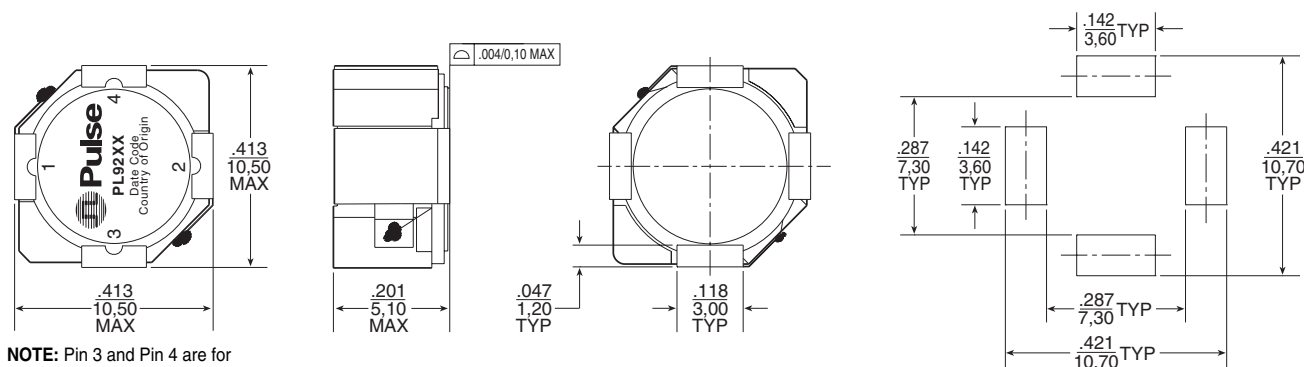
### Electrical Specifications @ 25°C — Operating Temperature -55°C to +130°C

| Part Numbers | Inductance @I <sub>rated</sub><br>(µH TYP) | I <sub>rated</sub> <sup>2</sup><br>(A) | DCR (mΩ) |      | Inductance @0A <sub>DC</sub><br>(µH) | Saturation <sup>3</sup><br>Current<br>(A) @25°C | Heating <sup>4</sup><br>Current<br>(A) |
|--------------|--------------------------------------------|----------------------------------------|----------|------|--------------------------------------|-------------------------------------------------|----------------------------------------|
|              |                                            |                                        | TYP      | MAX  |                                      |                                                 |                                        |
| PL9201       | 0.95                                       | 8.7                                    | 4.0      | 5.7  | 1.0*                                 | 11                                              | 8.7                                    |
| PL9202       | 1.55                                       | 7.4                                    | 5.5      | 7.9  | 1.6*                                 | 8.8                                             | 7.4                                    |
| PL9203       | 2.32                                       | 6.6                                    | 6.9      | 10.0 | 2.7*                                 | 7.3                                             | 6.6                                    |
| PL9204       | 3.24                                       | 5.5                                    | 10.0     | 14.5 | 3.6*                                 | 6.3                                             | 5.5                                    |
| PL9205       | 4.26                                       | 5.1                                    | 11.7     | 16.5 | 4.5*                                 | 5.5                                             | 5.1                                    |
| PL9206       | 5.64                                       | 4.4                                    | 15.6     | 22   | 6.0*                                 | 4.9                                             | 4.4                                    |
| PL9207       | 7.17                                       | 4.2                                    | 17.5     | 25   | 7.6*                                 | 4.4                                             | 4.2                                    |
| PL9208       | 9.3                                        | 3.6                                    | 23       | 35   | 10                                   | 4.0                                             | 3.6                                    |
| PL9209       | 10.8                                       | 3.3                                    | 27       | 37   | 12                                   | 3.7                                             | 3.3                                    |
| PL9210       | 13.4                                       | 3.0                                    | 34       | 47   | 15                                   | 3.4                                             | 3.0                                    |
| PL9211       | 17.5                                       | 2.7                                    | 40       | 58   | 18                                   | 2.9                                             | 2.7                                    |
| PL9212       | 19.4                                       | 2.6                                    | 43       | 67   | 22                                   | 2.8                                             | 2.6                                    |
| PL9213       | 24.2                                       | 2.2                                    | 61       | 79   | 27                                   | 2.4                                             | 2.2                                    |
| PL9214       | 30.6                                       | 2.1                                    | 69       | 94   | 33                                   | 2.2                                             | 2.1                                    |
| PL9215       | 38.5                                       | 1.8                                    | 93       | 126  | 39                                   | 2.0                                             | 1.8                                    |
| PL9216       | 46.1                                       | 1.7                                    | 104      | 140  | 47                                   | 1.8                                             | 1.7                                    |
| PL9217       | 53.2                                       | 1.6                                    | 119      | 157  | 56                                   | 1.7                                             | 1.6                                    |
| PL9218       | 63.1                                       | 1.45                                   | 147      | 202  | 68.0                                 | 1.6                                             | 1.45                                   |
| PL9219       | 76.6                                       | 1.36                                   | 165      | 232  | 82.0                                 | 1.4                                             | 1.36                                   |
| PL9220       | 88                                         | 1.29                                   | 184      | 270  | 100.0                                | 1.3                                             | 1.29                                   |
| PL9221       | 112                                        | 1.07                                   | 264      | 316  | 120.0                                | 1.2                                             | 1.07                                   |
| PL9222       | 135                                        | 1.02                                   | 294      | 456  | 150.0                                | 1.05                                            | 1.02                                   |
| PL9223       | 132                                        | 0.87                                   | 328      | 497  | 180.0                                | 0.96                                            | 0.87                                   |
| PL9224       | 198                                        | 0.82                                   | 450      | 681  | 220.0                                | 0.86                                            | 0.82                                   |
| PL9225       | 237                                        | 0.78                                   | 502      | 775  | 270                                  | 0.79                                            | 0.78                                   |
| PL9226       | 296                                        | 0.66                                   | 691      | 955  | 330                                  | 0.71                                            | 0.66                                   |
| PL9227       | 355                                        | 0.58                                   | 916      | 1087 | 390                                  | 0.66                                            | 0.58                                   |
| PL9228       | 445                                        | 0.54                                   | 1037     | 1403 | 470                                  | 0.59                                            | 0.54                                   |
| PL9229       | 495                                        | 0.53                                   | 1095     | 1623 | 560                                  | 0.54                                            | 0.53                                   |
| PL9230       | 610                                        | 0.49                                   | 1220     | 1824 | 680                                  | 0.49                                            | 0.50                                   |
| PL9231       | 702                                        | 0.43                                   | 1656     | 2355 | 820                                  | 0.45                                            | 0.43                                   |
| PL9232       | 890                                        | 0.40                                   | 1885     | 2850 | 1000                                 | 0.41                                            | 0.40                                   |

\*Inductance at 0A<sub>DC</sub> tolerance on indicated part numbers is ±30%; tolerance is ±20% on all other parts. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL9201 becomes PL9201T).

**NOTES FROM TABLE:** (See back page)

## Mechanical



**SUGGESTED PAD LAYOUT**

# SMT POWER INDUCTORS

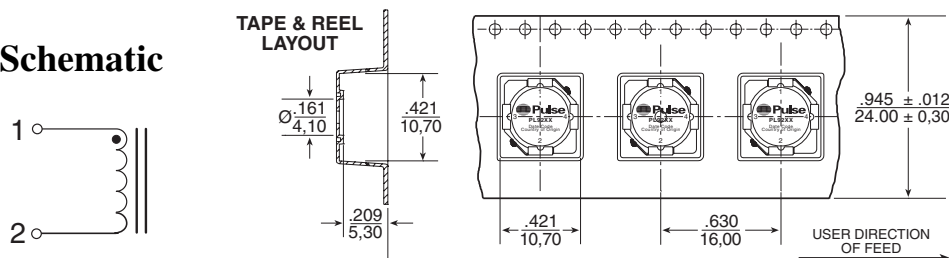
## Shielded Drum Core - PL92XX Series



### Notes from Tables

1. Temperature of the component (ambient plus temperature rise) must be within specified operating temperature range.
2. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
3. The saturation current is the current which causes the inductance to drop to 75% of its initial inductance at zero bias. This current is determined by placing the component at room ambient (25°C), and applying a short duration pulse current (to eliminate self-heating effects) to the component.
4. The heating current is the DC current, which causes the temperature of the part to increase by approximately 40°C. This current is determined by extending the terminals of the component with 30mm length 28 gauge buss wires and applying the current to the device for 30 minutes. The temperature is measured by placing the thermocouple between the winding and the shield.
5. 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. In order to determine the approximate total loss (or temperature rise) for a given application, both copper losses and core losses should be taken into account.

### Schematic



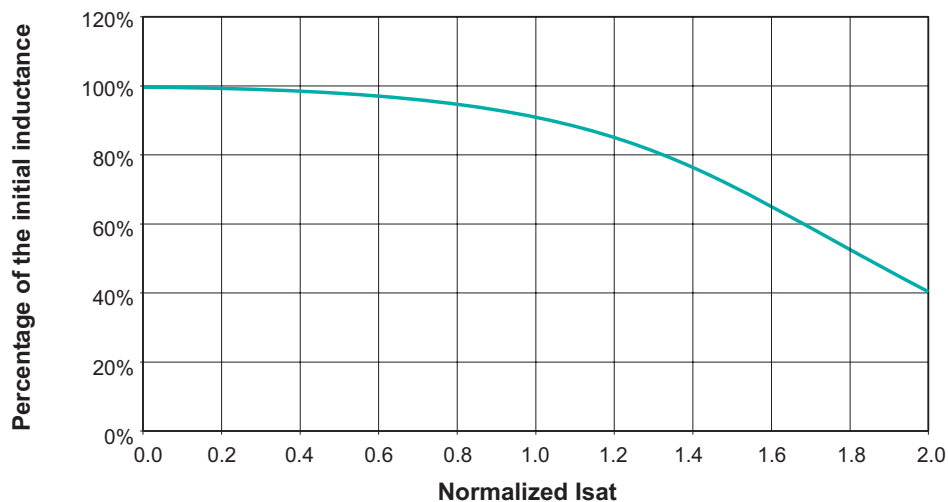
Weight . . . . . 2.0 grams

Tape & Reel . . . . . 650/reel

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified,  
all tolerances are  $\pm \frac{.010}{0.25}$

### Inductance vs Current Characteristics



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