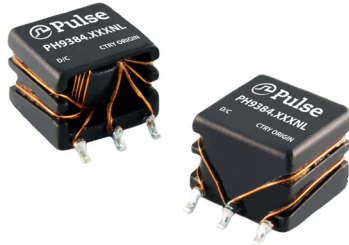


High Isolation Power Transformers

Toroid Platform SMD



- Push Pull Converter Transformer
- 4KVrms Isolation
- Reinforced insulation, 9.5mm Creepage
- Sidecar Package
- Patented:** US Pat 9,646,755

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

| Part Number | Inductance (1-3) ($\mu\text{H} \pm 35\%$) | Leakage Inductance (1-3) with (4-6) shorted ($\mu\text{H} \text{ MAX}$) | Capacitance (1, 2, 3) to (4, 5, 6) (pF MAX) | DCR (1-3) ($\Omega \text{ MAX}$) | DCR (4-6) ($\Omega \text{ MAX}$) | MAX (1-3) ¹ (V- $\mu\text{sec} \text{ Max}$) | Turns Ratio (1:3) (6:4) | Isolated Voltage (Vrms) |
|--------------|---|---|---|------------------------------------|------------------------------------|--|-------------------------|-------------------------|
| PH9384.011NL | 538 | 0.8 | 20 | 0.30 | 0.40 | 24 | 1CT : 1CT | 4000 |
| PH9384.012NL | 538 | 0.6 | 30 | 0.33 | 0.65 | 24 | 1CT : 2CT | |
| PH9384.021NL | 538 | 1.6 | 15 | 0.30 | 0.25 | 24 | 2CT : 1CT | |
| PH9384.034NL | 680 | 0.6 | 30 | 0.35 | 0.52 | 27 | 3CT : 4CT | |
| PH9384.035NL | 680 | 0.7 | 30 | 0.35 | 0.65 | 27 | 3CT : 5CT | |
| PH9384.043NL | 538 | 0.8 | 20 | 0.30 | 0.30 | 24 | 4CT : 3CT | |
| PH9384.083NL | 538 | 2.0 | 15 | 0.30 | 0.22 | 24 | 8CT : 3CT | |
| PH9384.089NL | 538 | 0.6 | 30 | 0.30 | 0.42 | 24 | 8CT : 9CT | |

Notes:

1. The maximum volt-use rating limits the peak flux density to 3600 gauss when used in bi-polar drive application with 200KHz. For unipolar drive applications or a bi-polar drive with 350kHz, a maximum volt-use could be 60% of the listed value. For Push-Pull topology, where the voltage is applied across half the primary winding turns, the maximum volts-use needs to be derated by 50%.

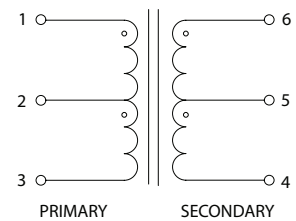
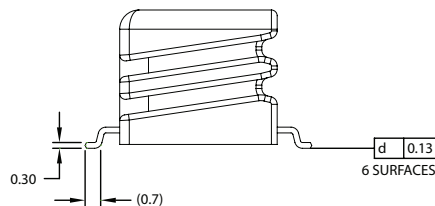
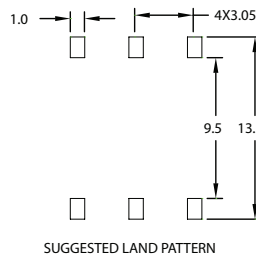
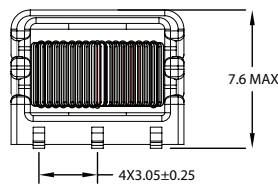
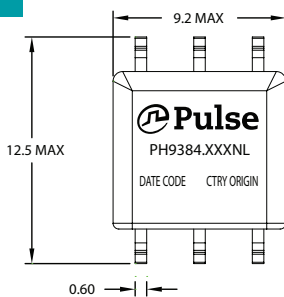
2. Optional Tape & Reel packing can be ordered by adding a "T" suffix to the part number (i.e. PH9384.012NL becomes PH9384.012NLT). Pulse complies to industry standard tape and reel specification EIA481.

3. The "NL" suffix indicates an RoHS-compliant part number.

Mechanical

Schematic

PH9384.XXXNL



Weight0.85grams
Tape & Reel400/reel
Tray55/tray

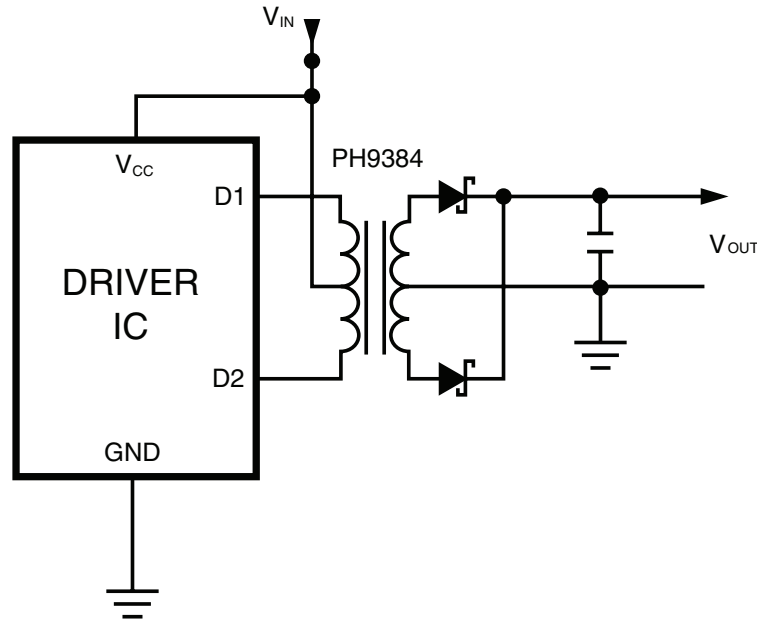
Dimensions: $\frac{\text{Inches}}{\text{mm}}$

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

Application

PH9384NL is a series of high isolation power supply transformer drivers. Intended to operate in a fixed duty cycle Push Pull topology, it is a part of a low cost solution for delivering lower power (up to 3W) from a low voltage source. A typical implementation would be an isolated RS-485/RS-232 power supply driver circuit, the design is compatible with the MAXIM™ MAX253 IC.

A schematic diagram for the Push Pull converter topology is given below.



For a fixed 50% duty cycle mode of operation, the output voltage is simply determined by the input voltage and turns ratio. So, with the available turns ratios, a variety of output voltages can be selected.

PH9384.034NL has been certified by UL to comply with UL60950-1 2 edition with reinforced insulation for a working voltage up to 300Vac. 7mm creepage and 3000Vrms isolation voltage is guaranteed to meet this requirement. The actual isolation and creepage capability of the design exceeds these UL ratings. The remainder of the PH9384.xxxNL series was not included in the UL certification but are fully compliant with the requirements for reinforced insulation.

MAXIM is a registered trademark of Maxim Integrated Products.

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