

High Isolation Power Transformers

EP7 Platform SMD



- Push Pull Converter Transformer
- Basic insulation for isolated power supply driver
- 4.0mm Creepage
- 4KVrms Isolation

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

| Part Number | Inductance (1-3) (mH ±45%) | Leakage Inductance (uH MAX) | Capacitance (pF MAX) | DCR (1-3) (Ω MAX) | DCR (4-6) (Ω MAX) | MAX (1-3) ¹ (V-μsec Max) | Turns Ratio (1:3) (6:4) | Isolated Voltage (Vrms) |
|--------------|-------------------------------|--------------------------------|-------------------------|----------------------|----------------------|--|----------------------------|----------------------------|
| PH9184.011NL | 12.2 | 12.5 | 28.5 | 1.9 | 2.4 | 266 | 1CT : 1CT | 4000 |
| PH9184.021NL | 15.0 | 15.0 | 26.5 | 2.1 | 1.4 | 296 | 2CT : 1CT | |
| PH9184.034NL | 6.8 | 5.0 | 31.5 | 1.4 | 2.2 | 200 | 3CT : 4CT | |

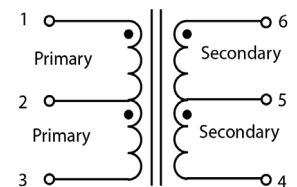
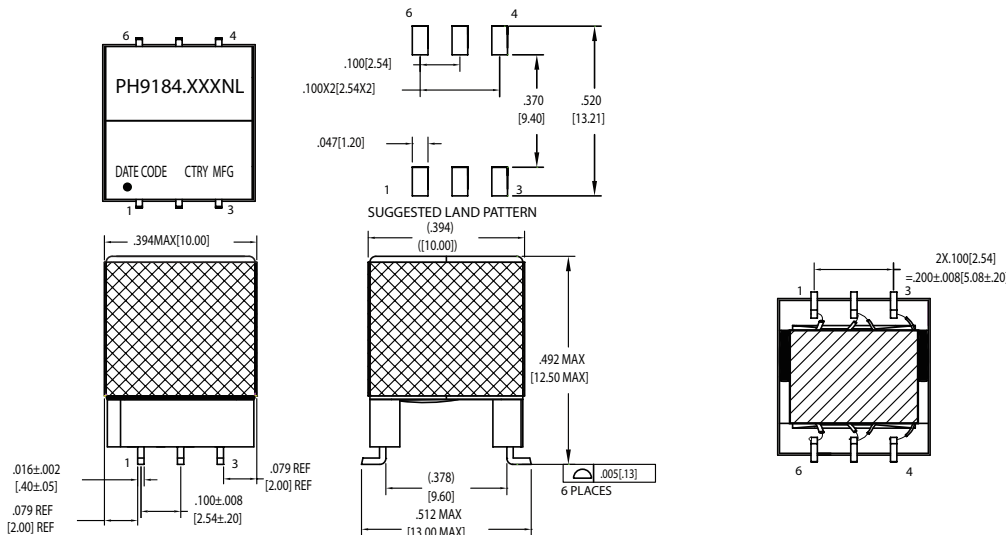
Notes:

- The maximum volt-usec 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-usec 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-usec needs to be derated by 50%.
- Optional Tape & Reel packing can be ordered by adding a "T" suffix to the part number (i.e. PH9184.011NL becomes PH9184.011NLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.
- The temperature of the component (ambient plus the temperature rise) must be within the stated operating temperature range.

Mechanical

Schematic

PH9184.XXXXNL



Weight2.6grams
 Tape & Reel150/reel
 Tray80/tray

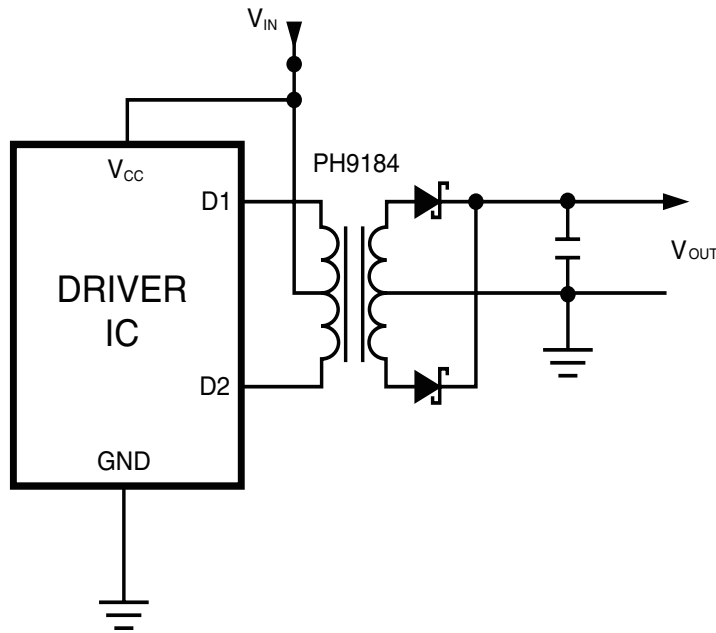
Dimensions: $\frac{\text{Inches}}{\text{mm}}$

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

Application

PH9184NL 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.

This transformer design conforms to UL60950-1 2 edition with basic insulation for a working voltage up to 300Vac. 3.2mm creepage and 3000Vrms isolation voltage is guaranteed to meet this requirement. The actual isolation and creepage capability of the design exceeds these UL ratings.

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