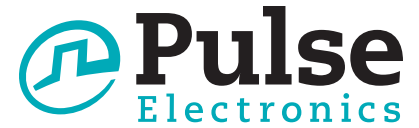


# Switch Mode Transformers

EP7 Platform SMD



- Push Pull Converter Transformer
- Reinforced insulation for isolated power supply driver
- Compatible with MAXIM™ MAX253 to power RS-485/RS232 transceiver
- 8mm creepage, 4000V Hi-pot
- UL and TUV certification
- UL class F insulation System compliant

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C<sup>4</sup>

| Part <sup>2,3</sup><br>Number | Inductance<br>(1-3)<br>( $\mu\text{H} \pm 45\%$ ) | DCR (1-3)<br>( $\Omega$ MAX) | MAX (1-3) <sup>1</sup><br>(V- $\mu\text{sec}$ ) | Turns<br>Ratio | Isolated Voltage<br>(Vrms) |
|-------------------------------|---|------------------------------|---|----------------|----------------------------|
| PH9185.011NL                  | 750.0   | 0.50                         | 66.0  | 1:1            | 4000.0                     |
| PH9185.012NL                  | 450.0   | 0.40                         | 52.0  | 1:2            |                            |
| PH9185.013NL                  | 200.0   | 0.35                         | 36.0  | 1:3            |                            |
| PH9185.021NL                  | 880.0   | 0.56                         | 74.0  | 2:1            |                            |
| PH9185.034NL                  | 750.0   | 0.50                         | 66.0  | 3:4            |                            |
| PH9185.038NL                  | 310.0   | 0.35                         | 44.0  | 3:8            |                            |
| PH9185.043NL                  | 1260.0  | 0.70                         | 89.0  | 4:3            |                            |
| PH9185.083NL                  | 560.0   | 0.45                         | 59.0  | 8:3            |                            |

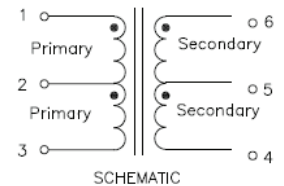
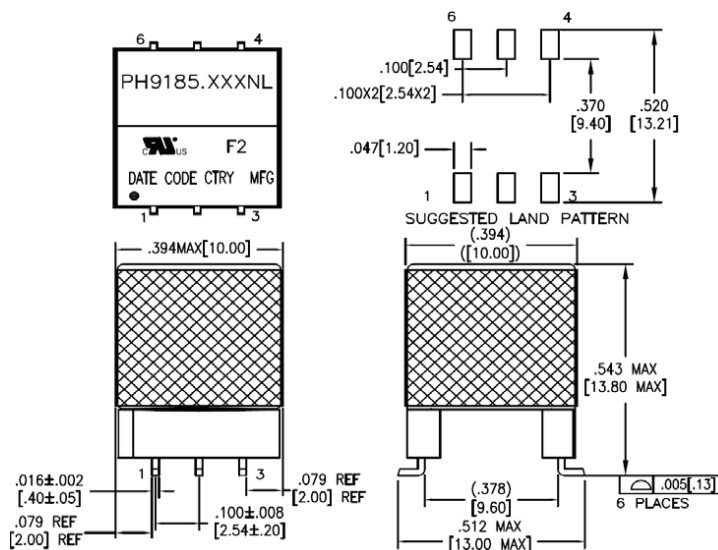
### Notes:

- 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.
- Optional Tape & Reel packing can be ordered by adding a "T" suffix to the part number (i.e. PH9185.012NL becomes PH9185.012NLT). 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

#### PH9185.XXXNL



Weight .....2.6grams  
Tape & Reel .....150/reel  
Tray .....80/tray

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

Unless otherwise specified,  
all tolerances are  $\pm \frac{.010}{0,25}$

USA 858 674 8100

Germany 49 7032 7806 0

Singapore 65 6287 8998

Shanghai 86 21 62787060

China 86 755 33966678

Taiwan 886 3 4356768

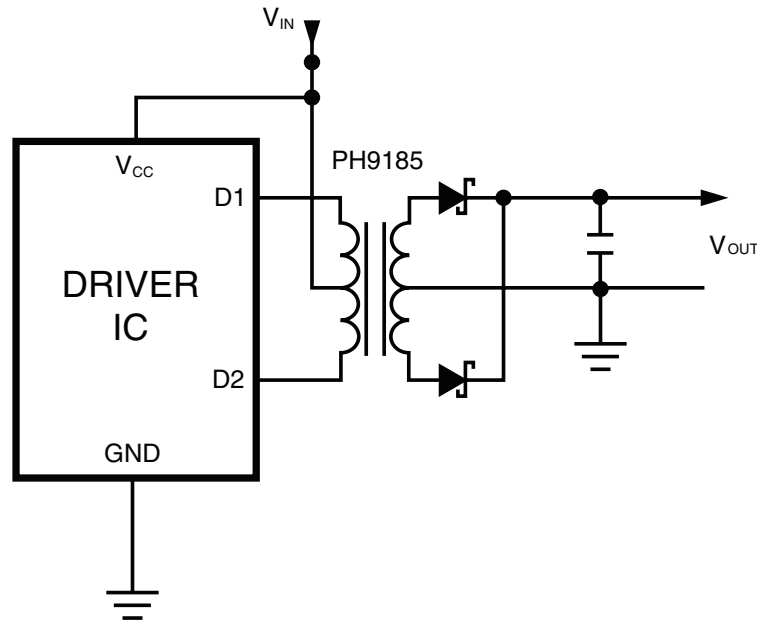
# Switching Mode Transformers

EP7 Platform SMD

## Application

PH9185NL 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 has been certified by UL to comply with U L60050-1 2<sup>ND</sup> edition, and CAN/CSA C22.2 NO. 60950-1-07 2<sup>ND</sup> edition; and by TUV to comply with EN61558-1 and EN61558-2-16 with reinforced insulation for a working voltage up to 400V 8mm creepage and 4000Vrms isolation voltage is guaranteed to meet this requirement. The design also complies with the Pulse's class F insulation system.

MAXIM is a registered trademark of Maxim Integrated Products.

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