

# High Isolation Power 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 and other communication interfaces
- 8mm creepage, 5KVrms isolation
- UL and TUV certification

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

Part Number <sup>2,3,4</sup>	Inductance (1-3) ( $\mu\text{H} \pm 45\%$ )	DCR (1-3) <sup>1</sup> ( $\Omega$ MAX)	DCR (4-6) ( $\Omega$ MAX)	MAX (1-3) <sup>1</sup> (V- $\mu\text{sec}$ Max)	Turns Ratio (1:3) (6:4)	Isolated Voltage (Vrms)
PH9185.011NL	750	0.50	0.55	66	1CT : 1CT	5000
PH9185.012NL	450	0.40	0.80	52	1CT : 2CT	
PH9185.013NL	200	0.35	0.95	36	1CT : 3CT	
PH9185.021NL	1800	0.75	0.45	100	2CT : 1CT	
PH9185.034NL	750	0.50	0.75	66	3CT : 4CT	
PH9185.038NL	310	0.44	1.00	44	3CT : 8CT	
PH9185.043NL	1260	0.70	0.56	89	4CT : 3CT	
PH9185.083NL	2350	0.90	0.40	110	8CT : 3CT	

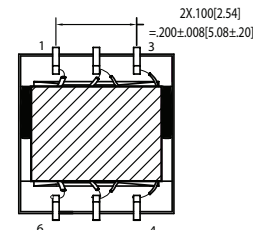
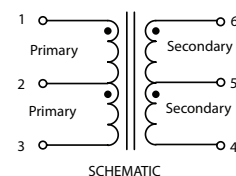
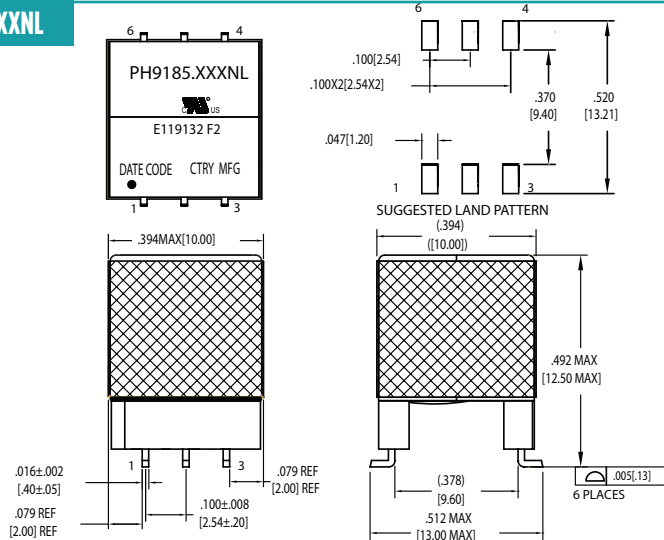
### Notes:

- 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%.
- PH9185.13NL not UL/TUV certified
- 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.XXXXNL



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

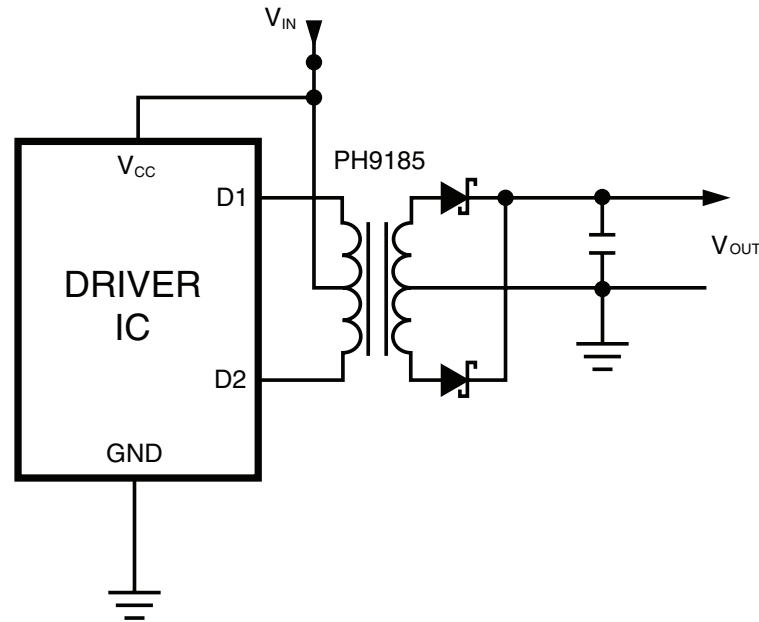
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## Application

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 UL60950-1 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 5000Vrms isolation voltage is guaranteed to meet this requirement. The design also complies with the Pulse's class F insulation system. Cost reduced versions without UL/TUV certification available, please contact Pulse Electronics for more information.

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