High Isolation Power Transformers

EP7 Platform SMD

- *AEC-Q200 Qualified Push Pull 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

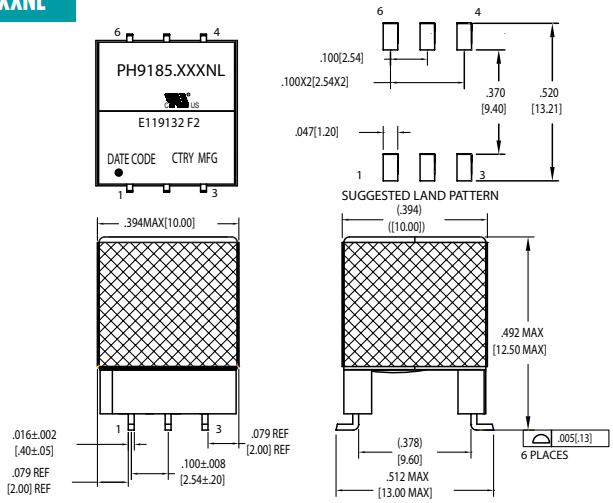
Part[2,3,4] Number	Inductance (1-3) (µH ±45%)	DCR (1-3)[1] (Ω MAX)	DCR (4-6) (Ω MAX)	MAX (1-3)[1] (V-µsec Max)	Turns Ratio (1:3) (6:4)	Isolated Voltage[2] (Vrms)
PH9185.011NL	750	0.50	0.55	66	1CT : 1CT	5000
PH9185.012NL	450	0.40	0.80	52	1CT : 2CT	
PH9185.013NL	200	0.35	0.95	36	1CT : 3CT	
PH9185.021NL	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:

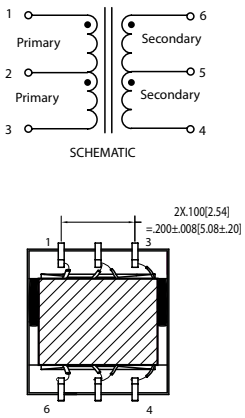
1. The maximum volt-usec rating limits the peak flux density to 3600 gauss when used in bi-polar drive application with 200KHz. For unipolar drive applications or a bi-polar drive with 350kHz, a maximum volt-usec could be 60% of the listed value. For Push-Pull topology, where the voltage is applied across half the primary winding turns, the maximum volts-use needs to be derated by 50%.
2. The AEC-Q200 temperature and humidity operational life testing was completed using a dielectric strength test of 5000Vdc.
3. Optional Tape & Reel packing can be ordered by adding a "**T**" suffix to the part number (i.e. PH9185.012NL becomes PH9185.012NL**T**). Pulse complies to industry standard tape and reel specification EIA481.
4. The "NL" suffix indicates an RoHS-compliant part number.
5. The temperature of the component (ambient plus the temperature rise) must be within the stated operating temperature range.

Mechanical

PH9185.XXXXNL



Schematic



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

Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25

USA 858 674 8100 Germany 49 2354 777 100 Singapore 65 6287 8998 Shanghai 86 21 62787060 China 86 755 33966678 Taiwan 886 3 4356768

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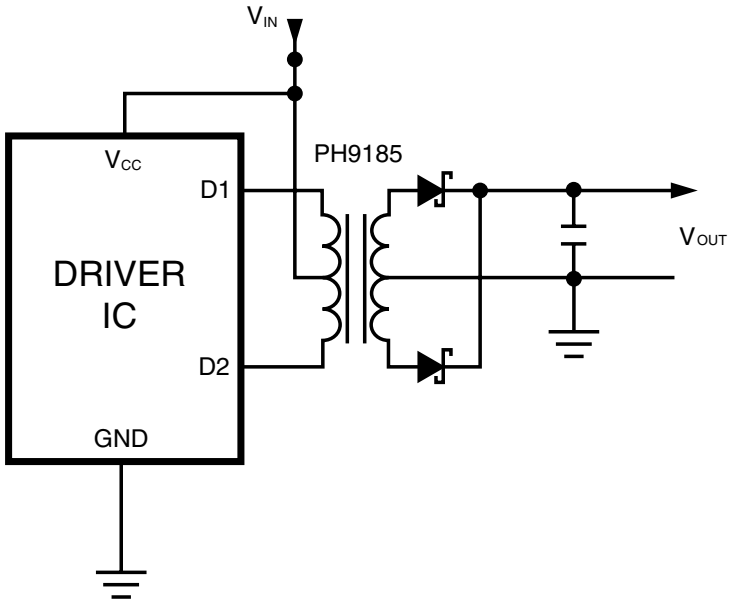
Application

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 2nd edition, and CAN/CSA C22.2 NO. 60950-1-07 2nd edition; and by TUV to comply with EN61558-1 and EN61558-2-16 with reinforced insulation for a working voltage up to 400Vac 8mm creepage and 5000Vrms isolation voltage is guaranteed to meet this requirement. The design also complies with the Pulse's class F insulation system. PH9185.013NL was not included in the original UL/TUV certification but is complaint. Cost reduced versions without UL/TUV certification available, please contact Pulse Electronics for more information.

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