

# Isolation Power Transformers

EE5 Platform SMD



- Push Pull Converter Transformer
- Operational Insulation
- 1.5KVrms isolation (380Vrms continuous)
- Compact and cost effective industrial design
- Output: 1.0W max

### 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) <sup>1</sup> (V- $\mu\text{sec}$ Max)	Turns Ratio (1:3) (6:4)	Isolated Voltage (Vrms)
PH9084.011NL	456	3.0	15	2.0	2.0	37	1CT : 1CT	1500
PH9084.034NL	256	3.0	15	1.6	2.0	28	3CT : 4CT	
PH9084.043NL	456	3.0	15	2.0	2.0	37	4CT : 3CT	
PH9084.021NL	456	3.0	15	2.0	1.2	37	2CT : 1CT	

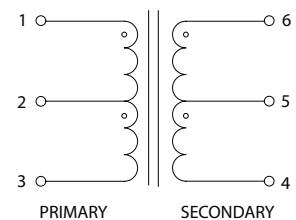
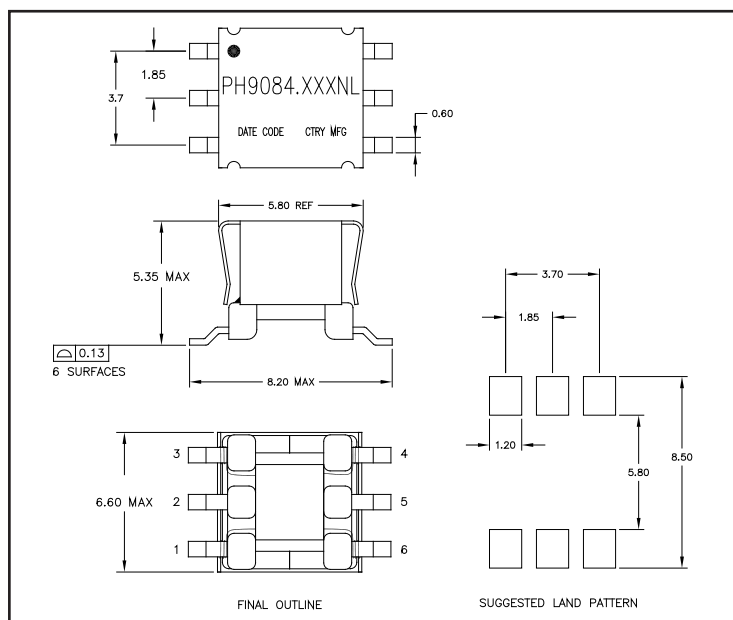
#### Notes:

- The ET Max is calculated to limit the core loss and temperature rise at 200KHz based on a bipolar flux swing of 180mT Peak.
- For Push-Pull topology, where the voltage is applied across half the primary winding turns, the ET needs to be derated by 50% for the same flux swing.
- The applied ET may need to be further derated for higher frequencies based on the temperature rise which results from the core and copper losses
  - To calculate total copper loss (W), use the following formula:  
Copper Loss (W) =  $I_{rms\_Primary}^2 * DCR\_Primary + I_{rms\_Secondary}^2 * DCR\_Secondary$
  - To calculate total core loss (W), use the following formula:  
Core Loss (W) =  $1.2E-12 * (\text{Frequency in kHz})^{1.9} * (180 * [ET/ET \text{ Max}])^{2.7}$   
Where ET is the applied Volt Second, ET Max is the rated Volt Second for 180mT flux swing
  - To calculate temperature rise, use the following formula:  
Temperature Rise ( $^{\circ}\text{C}$ ) =  $302 * (\text{Core Loss (W)} + \text{Copper Loss (W)})$
- Optional Tape & Reel packing can be ordered by adding a "T" suffix to the part number (i.e. PH9084.011NL becomes PH9084.011NLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.

## Mechanical

## Schematic

PH9084.XXXNL



Weight .....0.37grams  
Tape & Reel .....900/reel  
Tray .....120/tray

#### Dimensions: mm

Unless otherwise specified,  
all tolerances are  $\pm 0.25$

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