

## Push Pull Converter Transformer

4KVrms Isolation
Compact and cost effective industrial design
Sidecar Package
Patented: US Pat 9,646,755

| Electrical Specifications @ $25^{\circ} \mathrm{C}$ - Operating Temperature $-40^{\circ} \mathrm{C}$ to $+125^{\circ} \mathrm{C}$ |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Part <br> Number | Inductance $(1-3)$ $(\mu \mathrm{H} \pm 35 \%)$ | Leakage Inductance <br> $(1-3)$ with (4-6) shorted (uHMAX) | $\begin{gathered} \text { Capacitance } \\ (1,2,3) \text { to }(4,5,6) \\ (\text { PF MAX }) \end{gathered}$ | $\begin{aligned} & \text { DCR (1-3) } \\ & (\Omega \operatorname{MAX}) \end{aligned}$ | $\begin{aligned} & \text { DCR (4-6) } \\ & (\Omega \operatorname{MAX}) \end{aligned}$ | $\operatorname{MAX}(1-3)^{1}$ <br> (V- H sec Max) | Turns Ratio $(1: 3)(6: 4)$ | Isolated Voltage (Vrms) |
| PH9384.011NL | 538 | 0.8 | 20 | 0.30 | 0.40 | 24 | 1CT : 1/T | 4000 |
| PH9384.012NL | 538 | 0.6 | 30 | 0.33 | 0.65 | 24 | 1CT:2CT |  |
| PH9384.021NL | 538 | 1.6 | 15 | 0.30 | 0.25 | 24 | 2CT:1CT |  |
| PH9384.034NL | 680 | 0.6 | 30 | 0.35 | 0.52 | 27 | 3CT: 4CT |  |
| PH9384.035NL | 680 | 0.7 | 30 | 0.35 | 0.65 | 27 | 3CT:5CT |  |
| PH9384.043NL | 538 | 0.8 | 20 | 0.30 | 0.30 | 24 | 4CT:3CT |  |
| PH9384.083NL | 538 | 2.0 | 15 | 0.30 | 0.22 | 24 | 8CT:3CT |  |
| PH9384.089NL | 538 | 0.6 | 30 | 0.30 | 0.42 | 24 | 8CT:9CT |  |

## 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 350 kHz , 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. Optional Tape \& Reel packing can be ordered by adding a " T " suffix to the part number (i.e. PH9384.012NL becomes PH9384.012NLT). Pulse complies to industry standard tape and reel specification EIA481.
3. The "NL" suffix indicates an ROHS-compliant part number.

Mechanical
Schematic

## PH9384.XXXXNL




SUGGESTED LAND PATTERN



Weight .......................... 0.85 grams
Tape \& Reel ........................400/reel
Tray ..55/tray

Dimensions: $\frac{\text { Inches }}{\mathrm{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0,25}$
power.pulseelectronics.com

## Application

PH9384NL 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 ${ }^{\text {M }}$ 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.

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| For More Information |  |  |  |  |  |
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