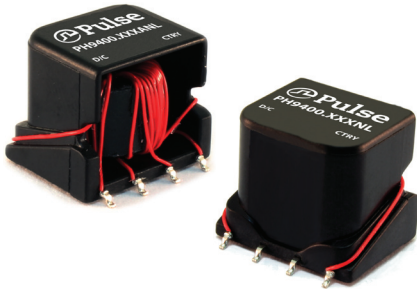






High Isolation Gate Drive Transformers

PH9400.XXXNL and PH9400.XXXANL - SMT



-  Basic and Reinforced Insulation
-  Patent Pending Sidecar package with 12mm creepage
-  Up to 5000Vrms gate to drive isolation
-  380Vrms Voltage rating

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

Part Number	Turns Ratio	ET (V * μsec MAX)	Core Loss Factor K1	Primary Inductance (1-4) (mH +/-35%)	Leakage Inductance Drive to Gate (μH MAX)	Parasitic Capacitance Drive to Gate (pF MAX)	DCR Drive (1-4) (Ω MAX)	DCR Gates (Ω MAX)	Hi-Pot	
									Drive-Gate (Vrms)	Gate-Gate (Vrms)
PH9400.XXXNL - Basic Insulation										
PH9400.111NL	1:1:1	315	0.67	4.5	4.0	60	1.8	2.5	4000	1500
PH9400.566NL	5:6:6	315	0.67	4.5	3.5	60	1.8	3.0	4000	1500
PH9400.122NL	1:2:2	250	0.84	2.88	3.0	60	1.5	4.2	4000	1500
PH9400.655NL	6:5:5	375	0.56	6.48	5.0	60	2.2	2.5	4000	1500
PH9400.211NL	2:1:1	375	0.56	6.48	8.0	60	2.2	1.6	4000	100
PH9400.XXXANL - Reinforced Insulation, 12mm creepage and clearance distance										
PH9400.111ANL	1:1:1	160	1.32	1.21	2.5	30	0.9	0.9	5000	1500
PH9400.566ANL	5:6:6	155	1.36	1.12	3.0	30	0.9	1.0	5000	2000
PH9400.233ANL	2:3:3	125	1.68	0.72	2.0	30	0.7	1.0	5000	2000
PH9400.655ANL	6:5:5	185	1.14	1.62	3.0	30	1.0	0.9	5000	2000
PH9400.211ANL	2:1:1	185	1.14	1.62	3.5	30	1.0	0.55	5000	2000

- Notes:**
- These gate drive transformers are meant to operate between 50 and 300 kHz with a 12V, 45% bipolar waveform. The max ET is calculated to limit the core loss and temperature rise at 100KHz. This value needs to be derated for higher frequencies using the temperature rise calculation.
 - The temperature rise of the component is calculated based on the total core loss and copper loss:
 - To calculate total copper loss (W), use the following formula:

$$\text{Copper Loss (W)} = I_{rms}^2 * (\text{DCR_Drive} + (\# \text{ of Gates}) * \text{DCR_Gates})$$
 - To calculate total core loss (W), use the following formula:

$$\text{Copper Loss (W)} = 6.67E-7 * (\text{Frequency in kHz})^{1.41} * (K1 * ET)^{2.57}$$
 Where ET = (V * Duty Cycle) / Frequency
 - To calculate temperature rise, use the following formula:

$$\text{Temperature Rise (C)} = 60.18 * (\text{Core Loss(W)} + \text{Copper Loss (W)})$$
 - ANL versions, which use triple insulated wire on both the drive and gate windings, are compliant with IEC 61558, IEC 61010 & IEC 60601 for reinforced insulation. NL versions, which use triple insulated Teflon wire on just the drive winding, comply with basic insulation requirements.

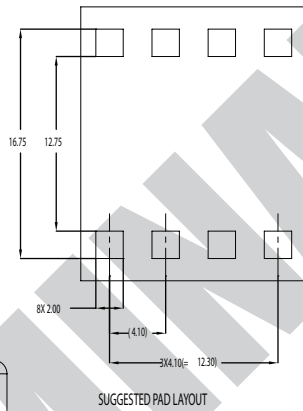
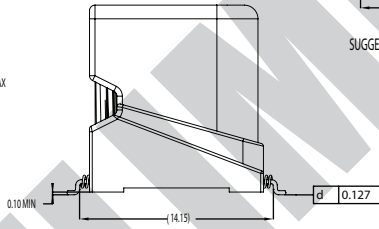
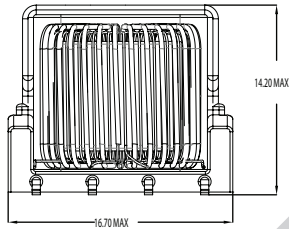
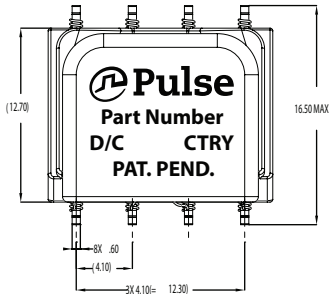
High Isolation Gate Drive Transformers

PH9400.XXXNL and PH9400.XXXANL - SMT

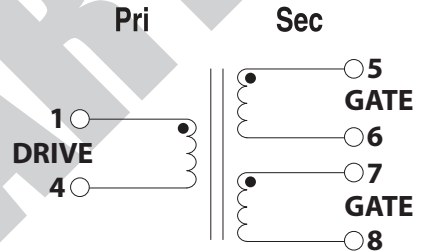
Mechanicals

Schematics

PH9400.XXXNL and PH9400.XXXANL



PH9400.XXXNL/PH9400.XXXANL



Weight2.5 grams
Tape & Reel150/Reel
Tray80/tray

Dimension: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified, all tolerances are $\pm \frac{.010}{0,25}$

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