High Isolation Gate Drive Transformers

- *Rugged design for Industrial Applications*
- *UL recognized, TUV approved to IEC 60950*
- *Up to 4250Vrms gate to drive isolation*
- *IEC 61558, IEC 61010 & IEC 60601 reinforced insulation compliant designs*

Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C								
Part [4, 5] Number	**Turns Ratio**	**ET** (V * µsec MAX)	**Primary Inductance** (1-10) (µH MIN)	**Leakage Inductance Gate to Drive** (µH MAX)	**DCR Drive** (1-10) (mΩ ±20%)	**DCR Gates** (mΩ ±20%)	**Hi-Pot**	
							Drive-Gate (Vrms)	**Gate-Gate** (Vrms)
P0584NL	1:1:1	95	450	0.5	80	72	3000	1500
P0585NL	1:1:1:1:1	95	450	3.0	330	180	3000	1500*
P0584ANL	1:1:1	115	686	0.8	710	710	4250	1500
P0585ANL	1:1:1:1:1	115	686	4.6	710	710	4250	1500*

Notes:

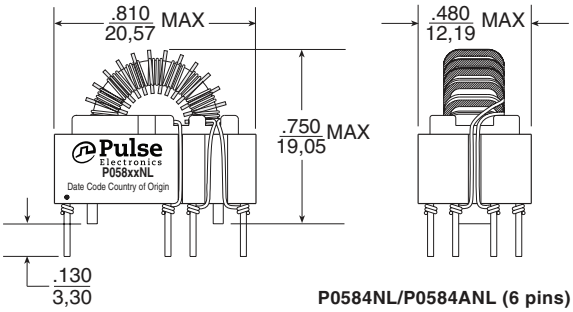
1. These gate drive transformers are meant to operate between 50 and 300 kHz with a 12V, 45% bipolar waveform.
2. The peak flux density should remain below 2100 Gauss to ensure that the core does not saturate. Use the following procedure to calculate the peak flux density:
   A. Calculate the Volt-µsec product (ET):
   ET = 10 * (Drive Voltage) * (Don) / (Frequency in kHz)
   B. Calculate the operating flux density (B): B_{PK} (Gauss) = X * ET/Ff where:
   Ff = 1 for unipolar drive applications and 2 for bipolar drive applications,
   X = 40 for -NL, 33 for -ANL
3. The temperature rise of the component is calculated based on the total core loss and copper loss:
   A. To calculate total copper loss (W), use the following formula:
   Copper Loss (W) = $Irms^2$ * (DCR_Drive + (# of Gates) * DCR_Gates)
   B. To calculate total core loss (W), use the following formula:
   Copper Loss (W) = 7.5E-5 * (Frequency in kHz)$^{1.67}$ * (X * ET/1000)$^{2.532}$
   X = 20 for -NL, 16 for -ANL
   C. To calculate temperature rise, use the following formula:
   Temperature Rise (C) = 60.18 * (Core Loss(W) + Copper Loss (W))$^{.833}$
4. 500Vrms Hi-Pot between pins 5 & 6
5. NL versions, which use triple insulated Teflon wire on the drive winding and magnetic wire on the gate windings , are TUV certified.
   ANL versions, which use triple insulated wire on both the drive and gate windings, are compliant with IEC 61558, IEC 61010 & IEC 60601.

High Isolation Gate Drive Transformers

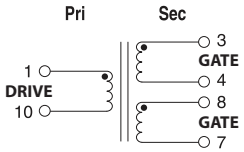
Mechanicals

Schematics

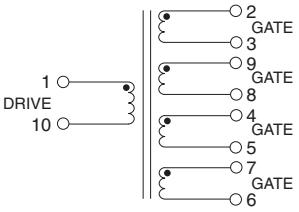
P058xxNL

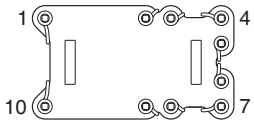


P0584NL/P0584ANL

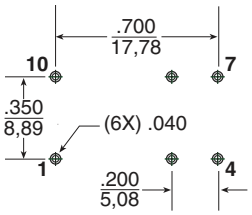


P0585NL/P0585ANL

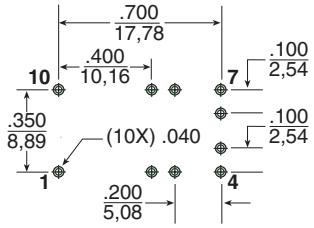




P0584NL/P0584ANL (6 pins)



P0585NL/P0585ANL (10 pins)



SUGGESTED PCB HOLE PATTERN

Weight .....5 grams
Tray 80/tray

Dimension: Inches / mm

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

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