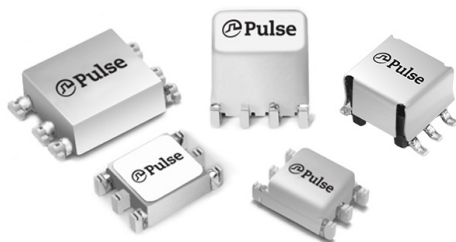


# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation



- >1500V<sub>DC</sub> isolation (380Vrms continuous)
- Basic insulation (1.4mm creepage/clearance) and functional available
- Operating frequency: 50kHz and up



Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C<sup>5</sup>

| Part Number <sup>3,4</sup>                                                           | Turns Ratio | Pri-Sec Isolation | MAX <sup>1</sup> V*μsec | Primary Inductance (μH MIN) | Leakage <sup>2</sup> Inductance (μH MAX) | DCR Primary (Ω MAX) | DCR Secondary (Ω MAX) | Package Size (L x W x H) (mm MAX) |
|--------------------------------------------------------------------------------------|-------------|-------------------|-------------------------|-----------------------------|------------------------------------------|---------------------|-----------------------|-----------------------------------|
| <b>Functional Insulation</b>                                                         |             |                   |                         |                             |                                          |                     |                       |                                   |
| PE-68386NL                                                                           | 1:1         | 1500 Vdc          | 9.7                     | 785                         | 0.46                                     | 0.60                | 0.60                  | 8.6 x 6.7 x 2.5                   |
| P0926NL                                                                              | 1:1:1       | 1500 Vdc          | 23.8                    | 300                         | 0.50                                     | 2.00                | 2.00                  | 8.0 x 6.6 x 5.3                   |
| P0544NL                                                                              | 1:1:1       | 1500 Vdc          | 45.1                    | 3300                        | 0.80                                     | 1.25                | 1.25                  | 9.0 x 8.6 x 7.6                   |
| PA0264NL                                                                             | 1:1:1       | 1000 Vrms         | 12.7                    | 1140                        | 0.65                                     | 0.75                | 0.75                  | 8.6 x 6.7 x 3.6                   |
| PA1323NL                                                                             | 1:1         | 1500 Vrms         | 21.7                    | 600                         | 2.0                                      | 1.25                | 1.25                  | 9.5 x 7.1 x 5.3                   |
| <b>Basic Insulation (1.4mm creepage and clearance between Primary and Secondary)</b> |             |                   |                         |                             |                                          |                     |                       |                                   |
| PA0173NL                                                                             | 1:1:1       | 1500 Vrms         | 17.2                    | 980                         | 0.75                                     | 0.62                | 0.88                  | 11.8 x 8.8 x 4.0                  |
| PA0185NL                                                                             | 1:1         | 1500 Vrms         | 17.2                    | 980                         | 0.75                                     | 0.88                | 0.62                  | 11.8 x 8.8 x 4.0                  |
| PA0184NL                                                                             | 1:1         | 1500 Vrms         | 27.2                    | 1200                        | 0.50                                     | 0.91                | 0.91                  | 9.0 x 8.6 x 7.6                   |
| PA0297NL                                                                             | 2:1:1       | 1500 Vrms         | 27.2                    | 1200                        | 0.60                                     | 0.91                | 0.46                  | 9.0 x 8.6 x 7.6                   |
| PA2777NL                                                                             | 1:1         | 1500 Vrms         | 9.3                     | 335.2                       | 0.36                                     | 0.70                | 0.70                  | 7.1 x 6.1 x 5.5                   |
| PA0510NL                                                                             | 2.5:1:1     | 1500 Vrms         | 27.2                    | 1200                        | 0.68                                     | 0.91                | 0.380                 | 9.0 x 8.6 x 7.6                   |
| PA3493NL                                                                             | 1.25:1      | 1650 Vrms         | 23                      | 656                         | 1.3                                      | 1.03                | 0.85                  | 10.9 x 9.7 x 2.7                  |

## Notes:

- The Maximum volt-μsec rating limits the peak flux density to 2200 Gauss when used in a unipolar drive application. For bi-polar drive applications, a maximum volt-sec of two times this rating is acceptable (ie: 2 \* (volt\*μsec rating) = (voltage applied to the primary) \* dutycycle / Frequency = V \* alpha / Freq\_Hz = V \* μsec
- Leakage inductance is measured at primary terminals with all secondaries shorted.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. P0544NL becomes P0544NLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- Continuous isolation voltage confirmed by 125°C/1000hrs accelerated aging with the bias voltage applied between primary and secondary windings.

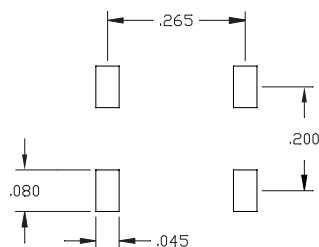
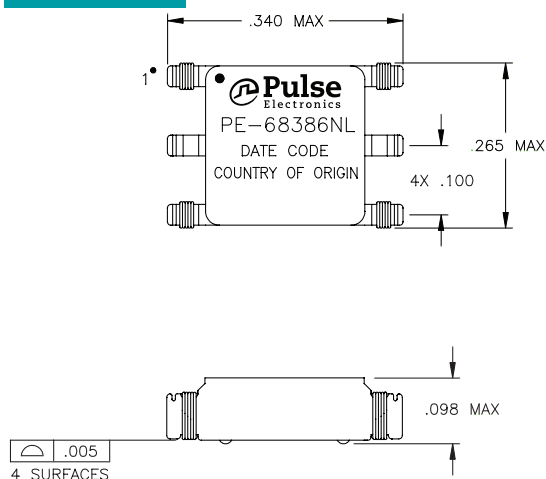
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

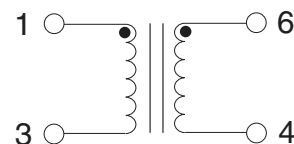
## Mechanicals

## Schematics

### PE-68386NL



SUGGESTED PAD LAYOUT

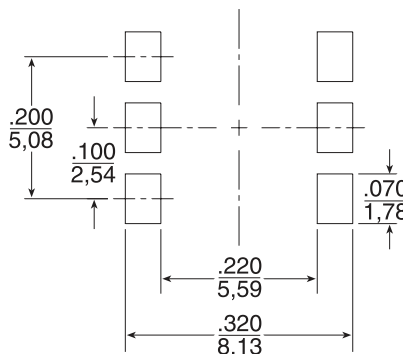
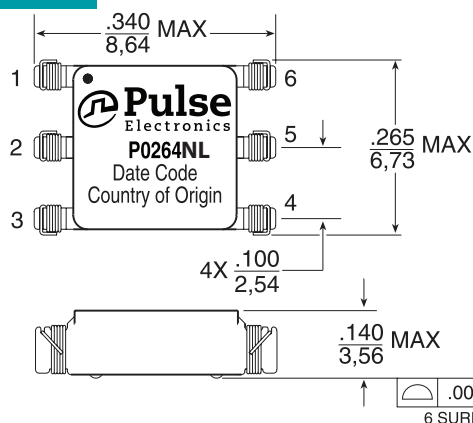


Weight .....0.28grams  
Tape & Reel .....1500/reel  
Tube .....60/tube  
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are:  $\pm \frac{.010}{.25}$

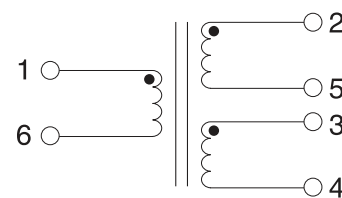
## Mechanicals

## Schematics

### PA0264NL



SUGGESTED PAD LAYOUT

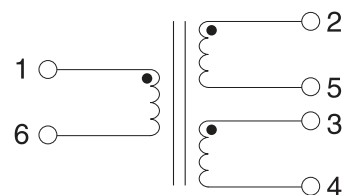
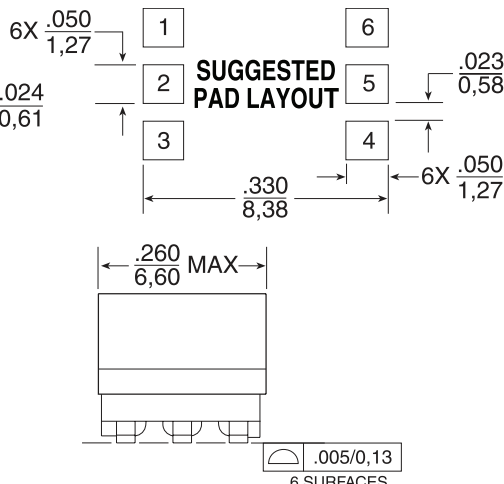
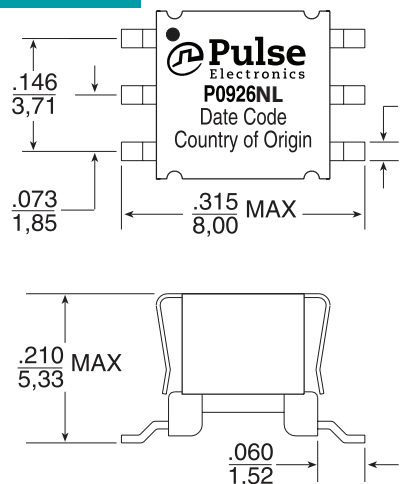


Weight .....0.28grams  
Tape & Reel .....1500/reel  
Tube .....60/tube  
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are:  $\pm \frac{.010}{.25}$

## Mechanicals

## Schematics

### P0926NL



Weight .....0.48grams  
Tape & Reel .....1000/reel  
Tray .....120/tray  
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are:  $\pm \frac{.010}{.25}$

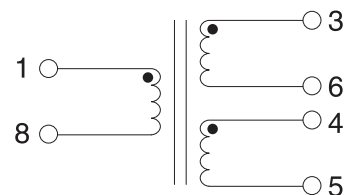
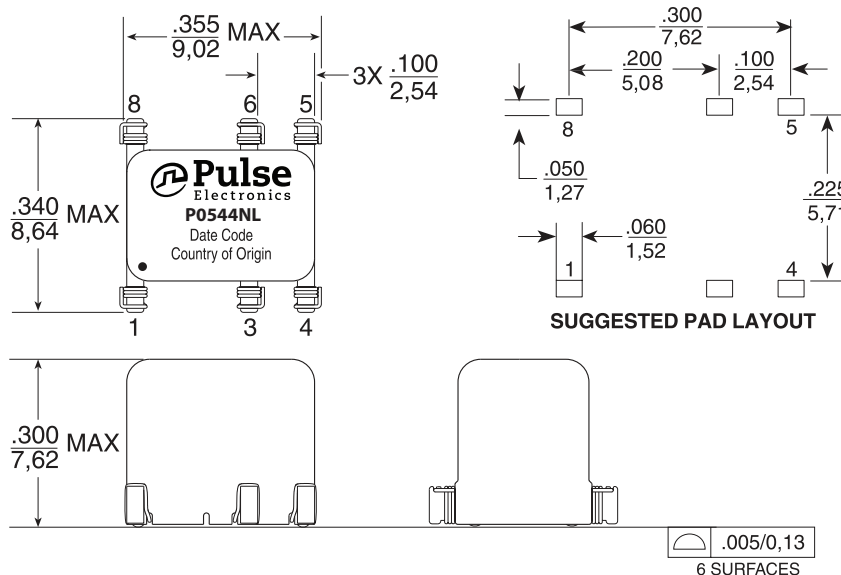
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### P0544NL

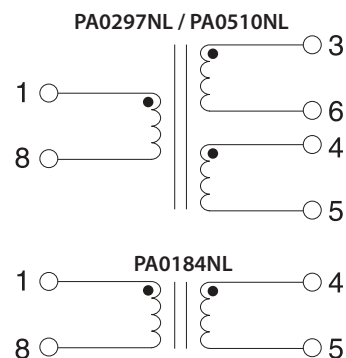
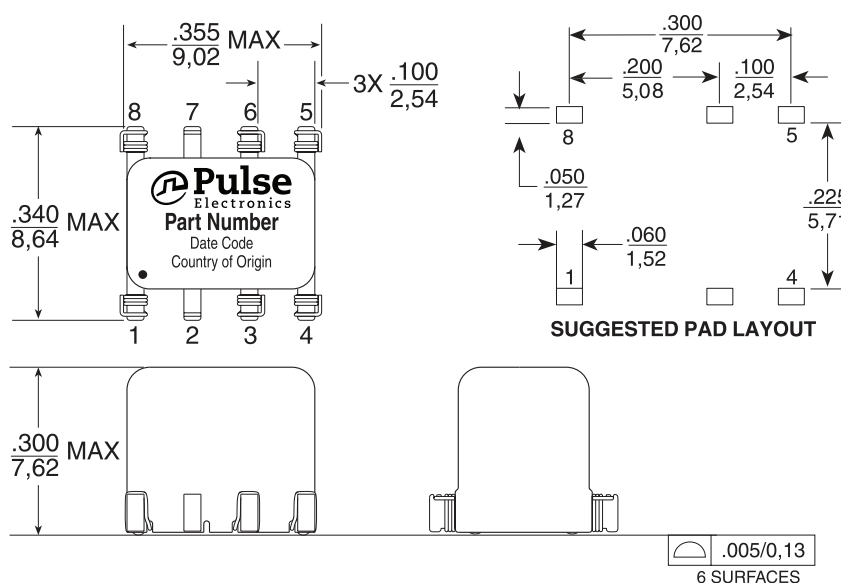


Weight .....0.60grams  
Tape & Reel .....400/reel  
Tube .....50/tube  
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are:  $\pm \frac{.010}{0,25}$

## Mechanicals

## Schematics

### PA0297NL, PA0510NL, PA0184NL



Weight .....0.60grams  
Tape & Reel .....400/reel  
Tube .....50/tube  
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are:  $\pm \frac{.010}{0,25}$

\* for PA0184 the pads for pins 3 and 6 in the suggested pad layout should not be used in the layout

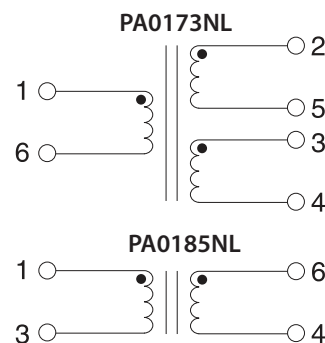
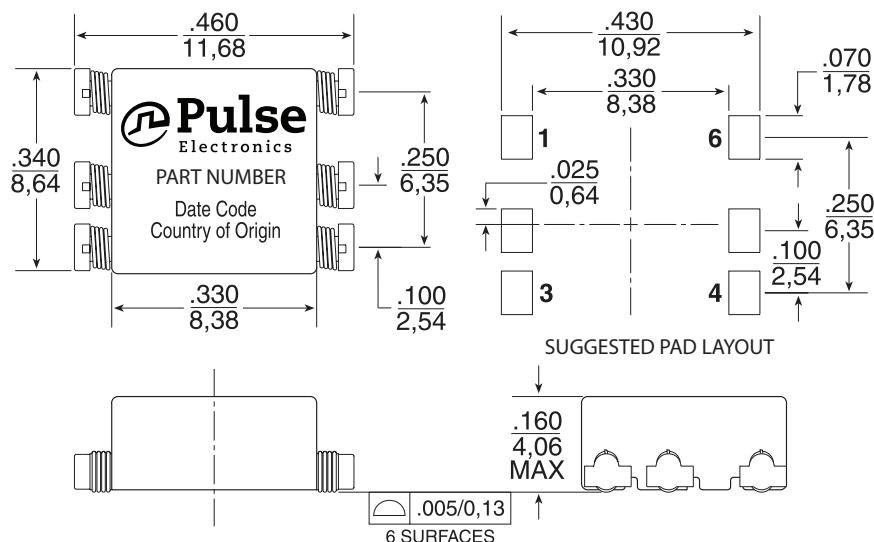
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### PA0173NL, PA0185NL



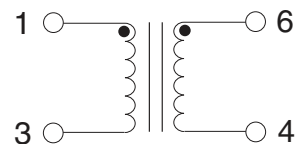
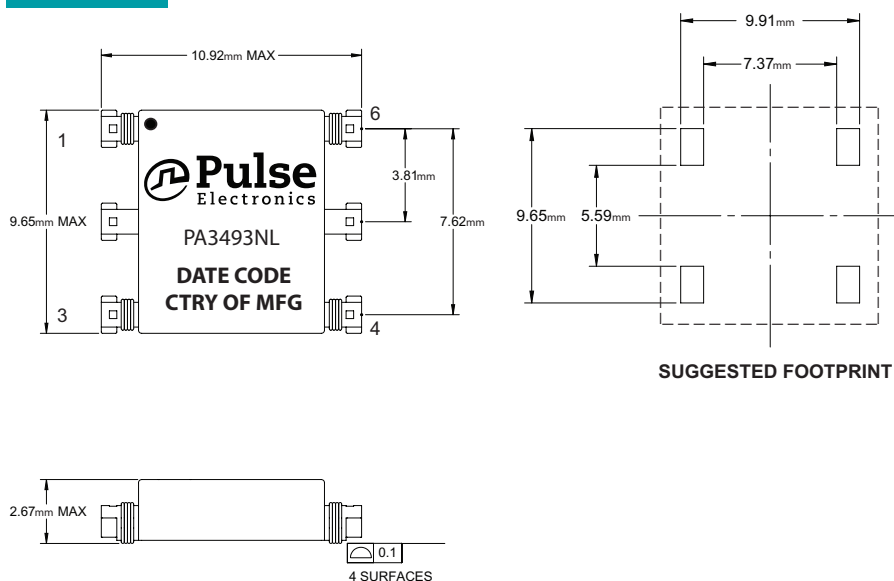
Weight .....0.48grams  
Tape & Reel .....900/reel  
Tube .....60/tube

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

## Mechanicals

## Schematics

### PA3493NL



Weight .....0.31grams  
Tape & Reel .....1250/reel  
Tube .....50/tube

Dimensions: mm  
Unless otherwise specified,  
all tolerances are:  $\pm 0.25$

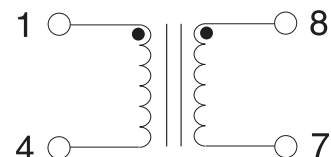
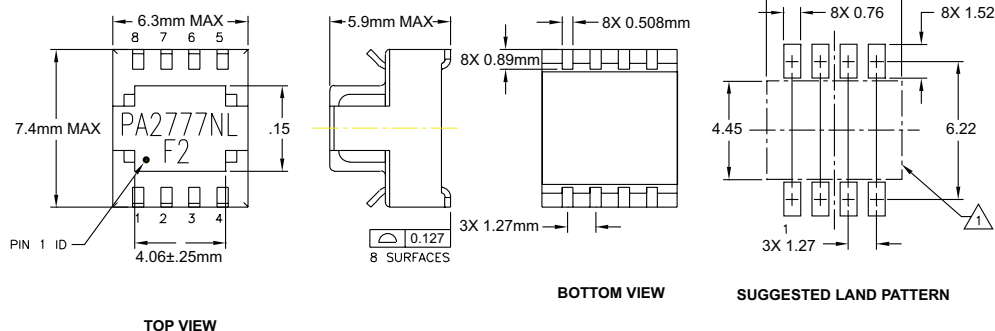
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### PA2777NL

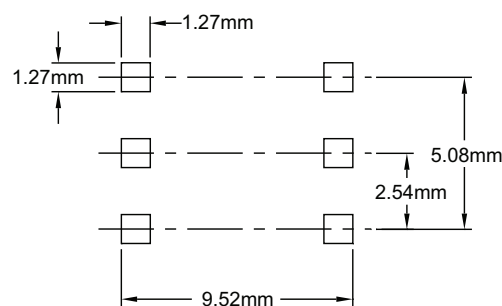
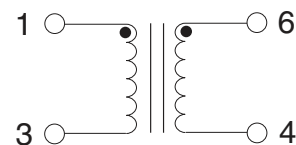
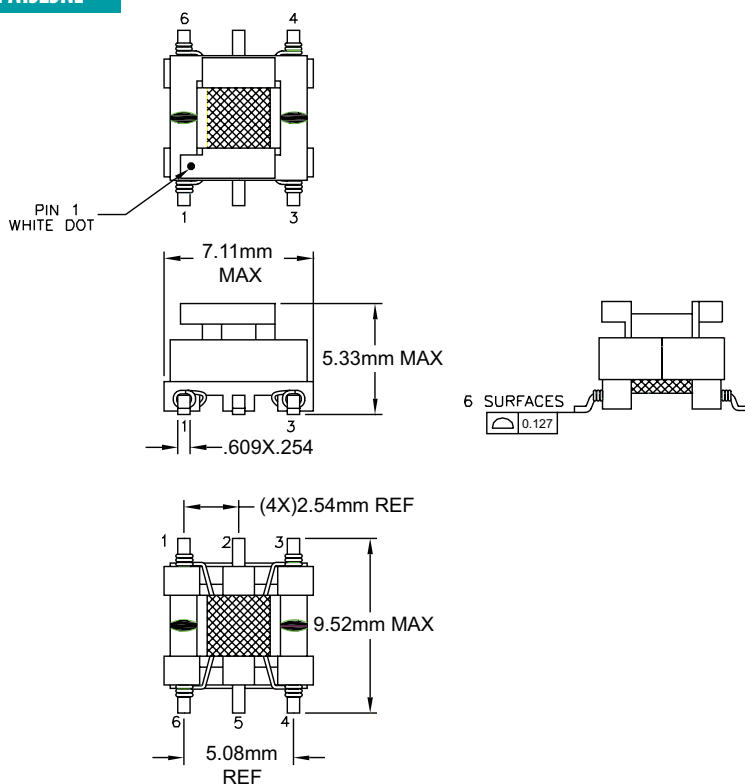


**Weight** .....0.32grams  
**Tape & Reel** .....850/reel  
**Tube** .....120/tube  
**Dimensions:** mm  
 Unless otherwise specified,  
 all tolerances are: ±0.25

## Mechanicals

## Schematics

### PA1323NL



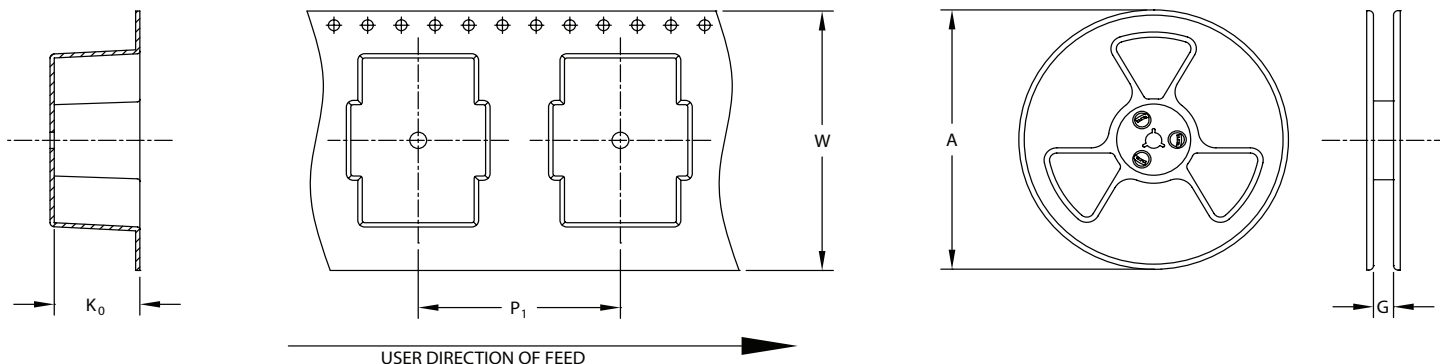
SUGGESTED PCB LAYOUT

**Weight** .....0.4grams  
**Tape & Reel** .....700/reel  
**Tray** .....225/tray  
**Dimensions:** mm  
 Unless otherwise specified,  
 all tolerances are: ±0.25

# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## TAPE & REEL INFO



| SURFACE MOUNTING TYPE, REEL/TAPE LIST |                |      |                |    |                |          |
|---------------------------------------|----------------|------|----------------|----|----------------|----------|
| PART NUMBER                           | REEL SIZE (mm) |      | TAPE SIZE (mm) |    |                | QTY      |
|                                       | A              | G    | P <sub>1</sub> | W  | K <sub>0</sub> | PCS/REEL |
| PE-68386NLT                           | Ø330           | 16.4 | 12             | 16 | 3.05           | 1500     |
| P0926NLT                              | Ø330           | 16.4 | 12             | 16 | 5.33           | 1000     |
| P0544NLT                              | Ø330           | 24.4 | 16             | 24 | 8.13           | 400      |
| PA0264NLT                             | Ø330           | 24.4 | 16             | 24 | 3.81           | 800      |
| PA1323NLT                             | Ø330           | 16.4 | 12             | 16 | 5.55           | 870      |
| PA0173NLT                             | Ø330           | 24.4 | 16             | 24 | 4.32           | 900      |
| PA0185NLT                             | Ø330           | 24.4 | 16             | 24 | 4.32           | 900      |
| PA0184NLT                             | Ø330           | 24.4 | 16             | 24 | 8.13           | 400      |
| PA0297NLT                             | Ø330           | 24.4 | 16             | 24 | 8.13           | 400      |
| PA2777NLT                             | Ø330           | 16.4 | 12             | 16 | 6.10           | 850      |
| PA0510NLT                             | Ø330           | 24.4 | 16             | 24 | 8.13           | 400      |
| PA3493NLT                             | Ø330           | 24.4 | 16             | 24 | 2.80           | 1250     |

## For More Information:

Americas - [prodinfo\\_power\\_americas@yageo.com](mailto:prodinfo_power_americas@yageo.com) | Europe - [prodinfo\\_power\\_emea@yageo.com](mailto:prodinfo_power_emea@yageo.com) | Asia - [prodinfo\\_power\\_asia@yageo.com](mailto:prodinfo_power_asia@yageo.com)

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