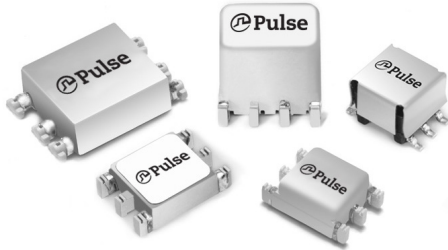


# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation



- Ⓢ >1500V<sub>DC</sub> isolation (380V<sub>rms</sub> 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.

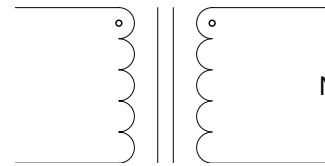
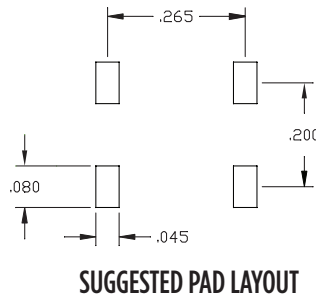
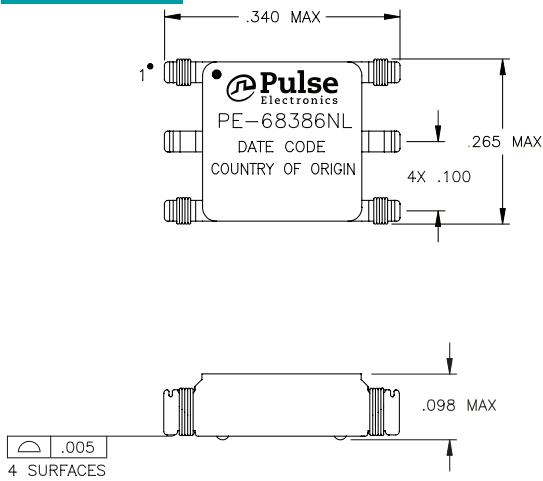
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals

## Schematics

### PE-68386NL

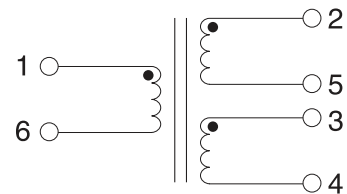
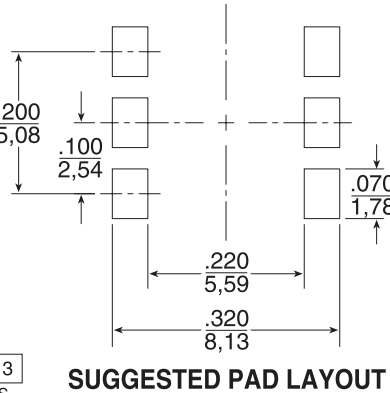
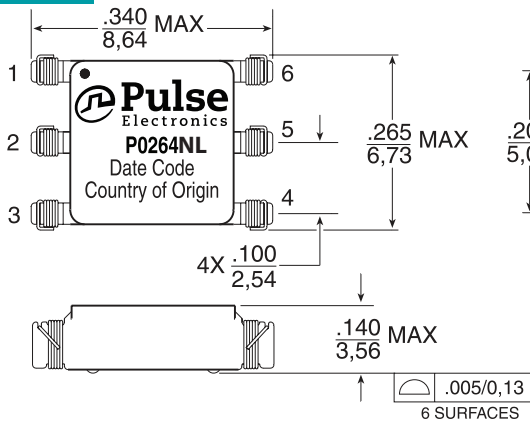


Weight .....0.28grams  
 Tape & Reel .....1500/reel  
 Tube .....60/tube  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are:  $\pm \frac{.010}{.25}$

## Mechanicals

## Schematics

### PA0264NL

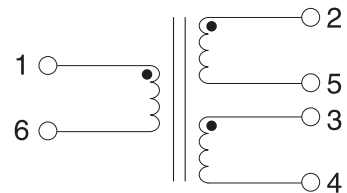
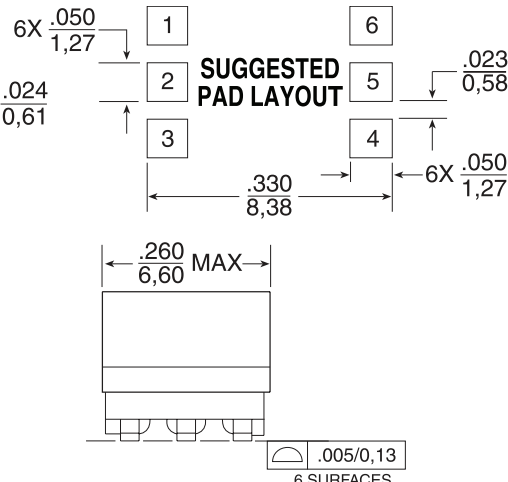
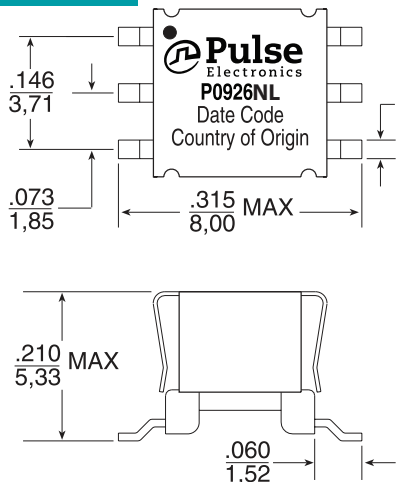


Weight .....0.28grams  
 Tape & Reel .....1500/reel  
 Tube .....60/tube  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are:  $\pm \frac{.010}{.25}$

## 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:  $\pm \frac{.010}{.25}$

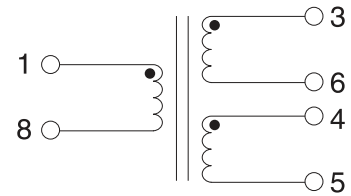
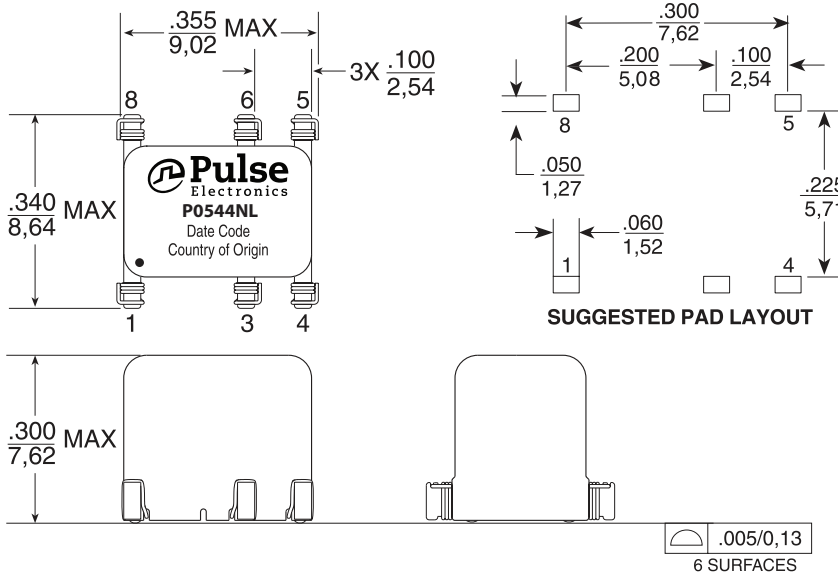
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### PO544NL

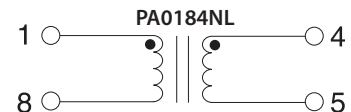
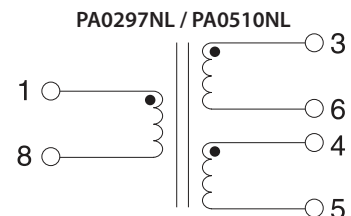
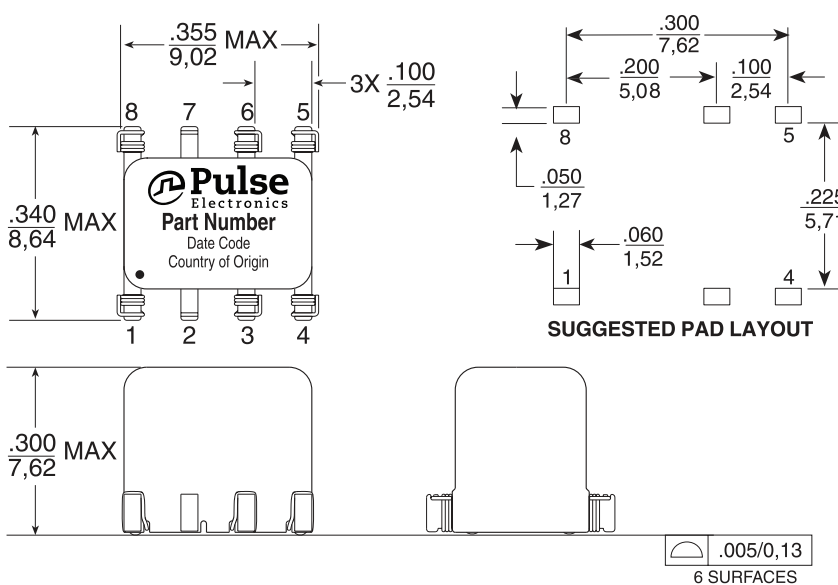


Weight .....0.60grams  
 Tape & Reel .....400/reel  
 Tube .....50/tube  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are:  $\pm \frac{.010}{0,25}$

## 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

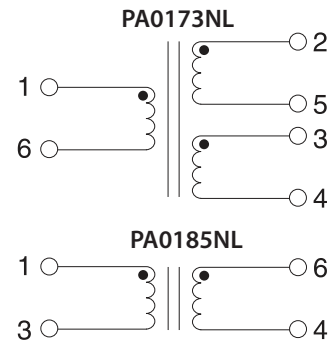
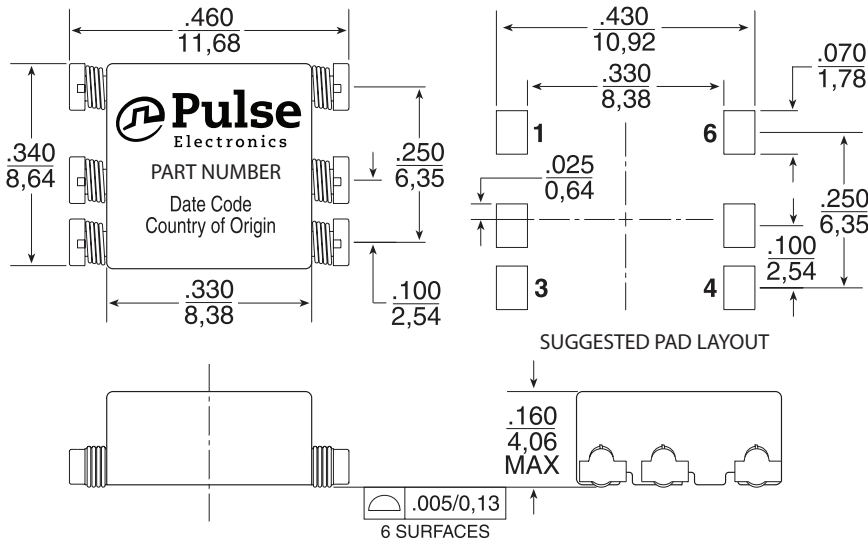
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### PA0173NL, PA0185NL

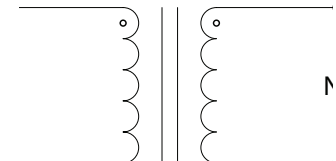
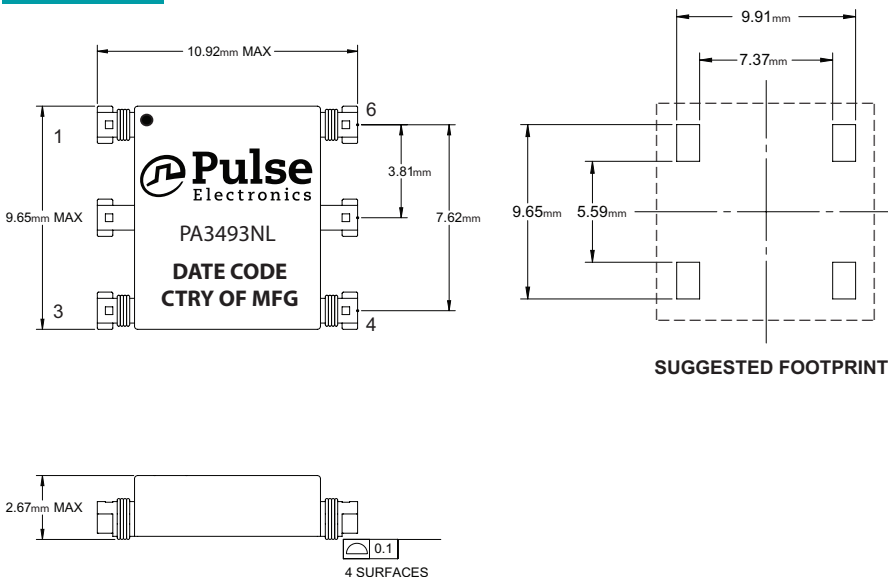


Weight .....0.48grams  
 Tape & Reel .....900/reel  
 Tube .....60/tube  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are:  $\pm \frac{0.010}{0.25}$

## Mechanicals

## Schematics

### PA3493NL



Weight .....0.31grams  
 Tape & Reel .....1250/reel  
 Tube .....50/tube  
 Dimensions: mm  
 Unless otherwise specified,  
 all tolerances are:  $\pm 0.25$

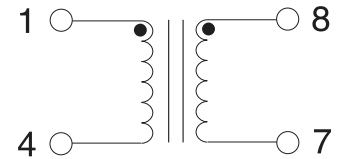
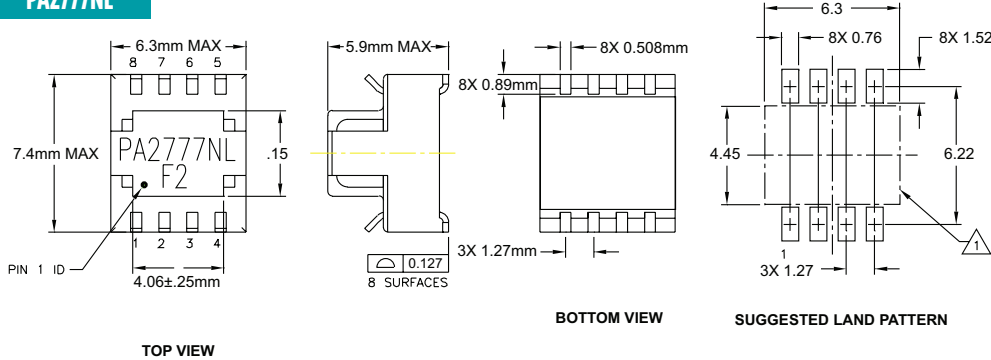
# SMT Gate Drive Transformers

>1500VDC Basic and Functional Insulation

## Mechanicals (continued)

## Schematics

### PA2777NL

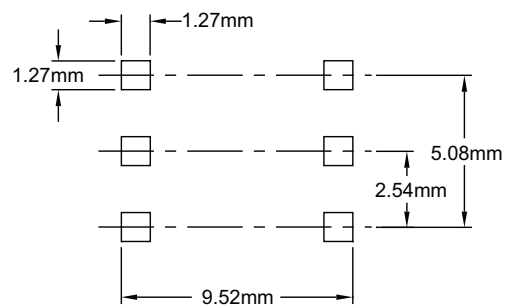
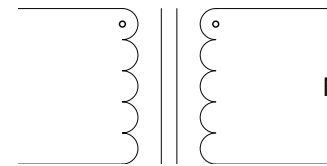
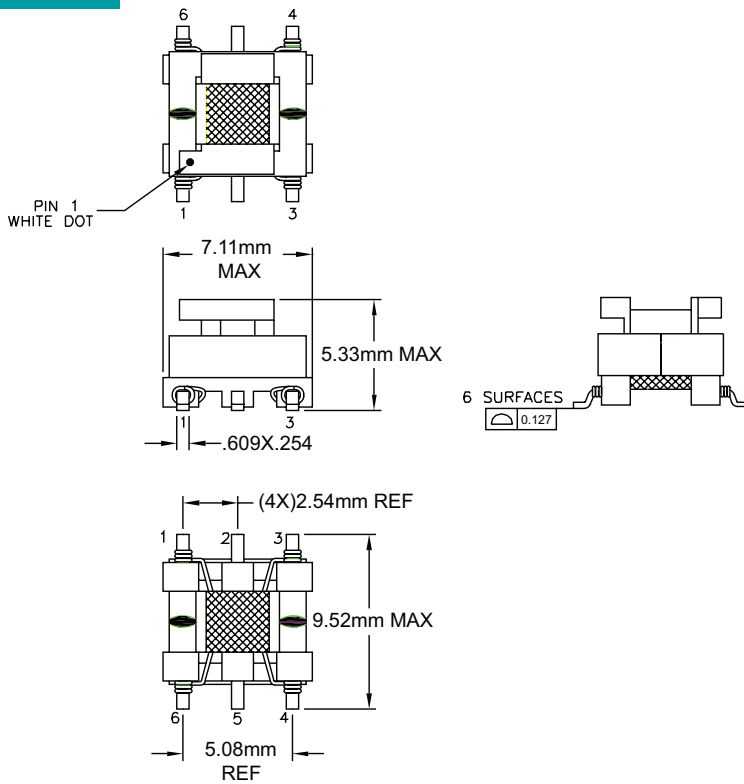


**Weight** .....0.32grams  
**Tape & Reel** .....850/reel  
**Tube** .....120/tube  
**Dimensions:** mm  
 Unless otherwise specified,  
 all tolerances are: ±0.25

## Mechanicals

## Schematics

### PA1323NL



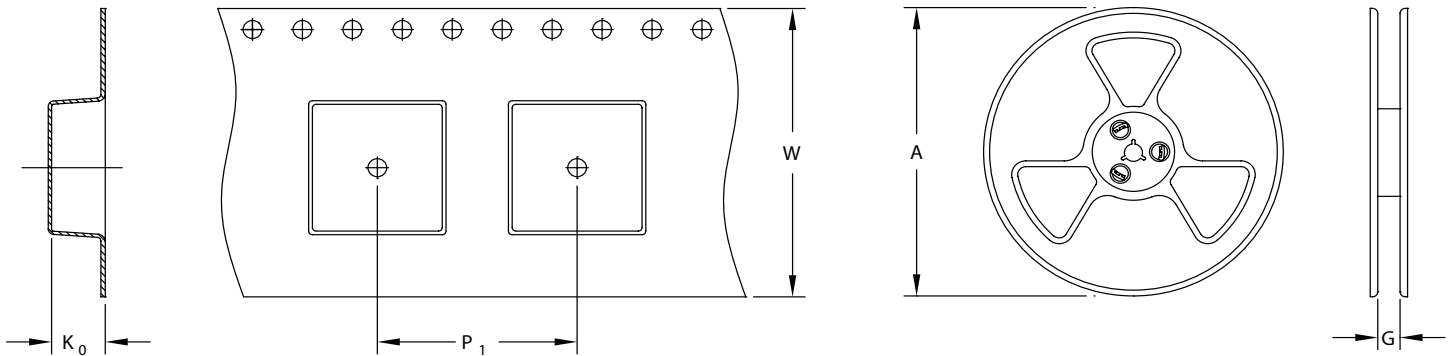
SUGGESTED PCB LAYOUT

**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    | $P_1$          | W  | $K_0$ | 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

### Pulse Worldwide Headquarters

15255 Innovation Drive Ste 100  
San Diego, CA 92128  
U.S.A.

### Pulse Europe

Pulse Electronics GmbH  
Am Rottland 12  
58540 Meinerzhagen  
Germany

### Pulse China Headquarters

Pulse Electronics (ShenZhen) CO., LTD  
D708, Shenzhen Academy of  
Aerospace Technology,  
The 10th Keji South Road,  
Nanshan District, Shenzhen,  
P.R. China 518057

### Pulse North China

Room 2704/2705  
Super Ocean Finance Ctr.  
2067 Yan An Road West  
Shanghai 200336  
China

### Pulse South Asia

3 Fraser Street 0428  
DUO Tower  
Singapore 189352

### Pulse North Asia

1F., No.111 Xiyuan Road  
Zhongli District  
Taoyuan City 32057  
Taiwan (R.O.C)

Tel: 858 674 8100  
Fax: 858 674 8262

Tel: 49 2354 777 100  
Fax: 49 2354 777 168

Tel: 86 755 33966678  
Fax: 86 755 33966700

Tel: 86 21 62787060  
Fax: 86 2162786973

Tel: 65 6287 8998  
Fax: 65 6280 0080

Tel: 886 3 4356768  
Fax: 886 3 4356820

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