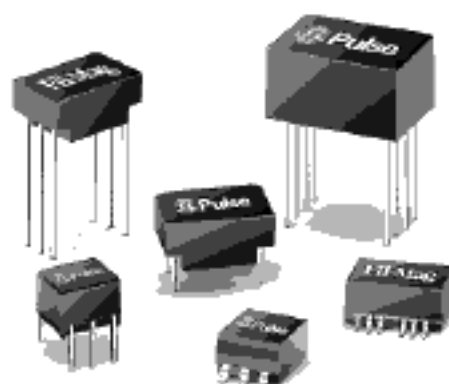


# GENERAL PURPOSE TRANSFORMERS

2 Watt Pulse, Electrostatically Shielded,  
500 mW Pulse, RF Pulse, and Control Transformers



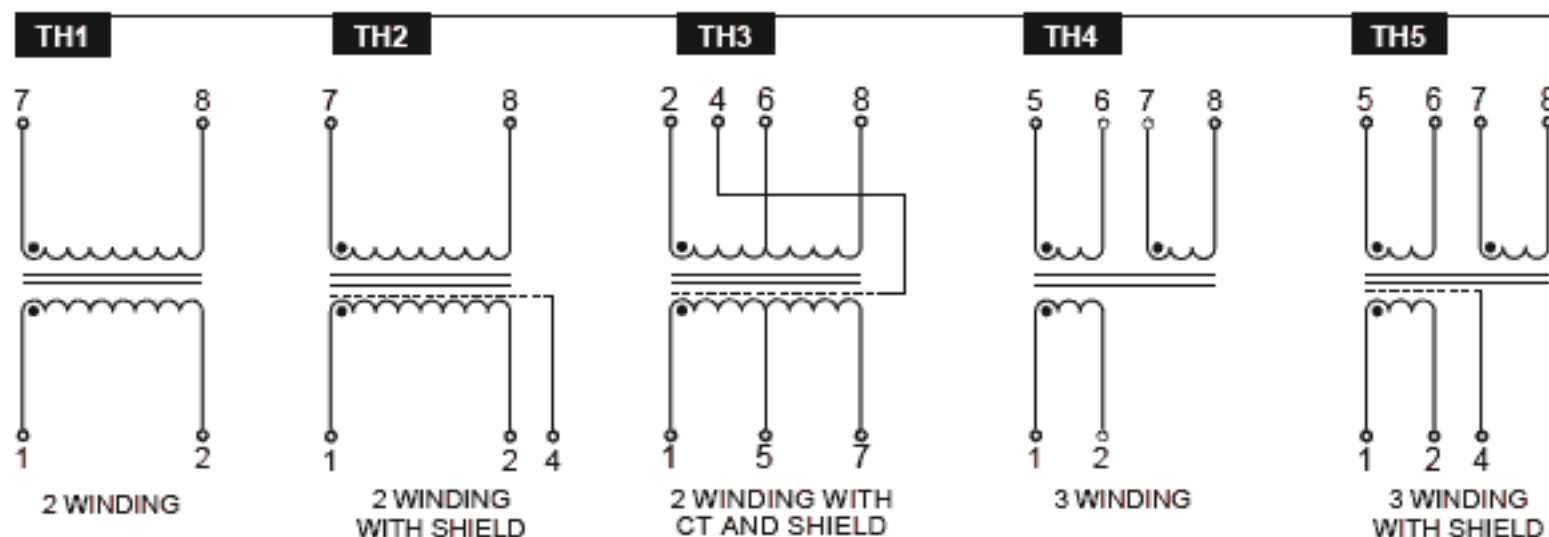
- Wide range of inductors and turns ratios
- Suitable for a variety of applications
- High flux density capability
- Available in through hole and surface mount packages

## Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Part Number                                    | Turns Ratio (±5%) | Primary Sine Wave OCL (mH MIN) | Primary ET-Constant (V-μs MIN) | Rise Time (ns MAX) | PRI/SEC* C <sub>WW</sub> (pF MAX) | Leakage Inductance PRI/SEC (μH MAX) | DCR Primary (Ω MAX) | DCR Secondary (Ω MAX) | DCR Tertiary (Ω MAX) | Hi-Pot (Vrms) | Schematic/Package Style |
|------------------------------------------------|-------------------|--------------------------------|--------------------------------|--------------------|-----------------------------------|-------------------------------------|---------------------|-----------------------|----------------------|---------------|-------------------------|
| <b>2 WATT PULSE TRANSFORMERS</b>               |                   |                                |                                |                    |                                   |                                     |                     |                       |                      |               |                         |
| PE-2227X                                       | 1:1               | 0.5                            | 46                             | 8                  | 26                                | 1.7                                 | 1.3                 | 1.4                   | —                    | 700           | TH1                     |
| PE-2228X                                       | 1:1               | 1.3                            | 84                             | 30                 | 40                                | 3.0                                 | 3.6                 | 3.8                   | —                    | 700           | TH1                     |
| PE-2243X                                       | 1:1               | 20.0                           | 250                            | 80                 | 87                                | 10.5                                | 27.0                | 28.0                  | —                    | 700           | TH1                     |
| PE-4290X                                       | 1:2               | 1.0                            | 70                             | 50                 | 36                                | 2.2                                 | 1.4                 | 3.1                   | —                    | 700           | TH1                     |
| PE-2229X                                       | 1:1:1             | 1.3                            | 91                             | 30                 | 38                                | 3.2                                 | 3.6                 | 3.8                   | 3.9                  | 700           | TH4                     |
| PE-2231X                                       | 1:1:1             | 5.0                            | 196                            | 70                 | 35                                | 13.0                                | 8.8                 | 9.6                   | 11.0                 | 700           | TH4                     |
| PE-2671X                                       | 4:1:4             | 0.2                            | 53                             | 50                 | 17                                | 5.7                                 | 1.2                 | 0.2                   | 1.3                  | 700           | TH4                     |
| <b>ELECTROSTATICALLY SHIELDED TRANSFORMERS</b> |                   |                                |                                |                    |                                   |                                     |                     |                       |                      |               |                         |
| PE-5154X                                       | 1:1               | 0.2                            | 91                             | 17                 | 2.7                               | 3.1                                 | 1.6                 | 1.6                   | —                    | 700           | TH2                     |
| PE-5156X                                       | 1:1               | 1.2                            | 77                             | 19                 | 4.1                               | 2.8                                 | 1.1                 | 1.1                   | —                    | 700           | TH2                     |
| PE-5160X                                       | 1:1               | 10.0                           | 224                            | 200                | 4.5                               | 22.0                                | 11.0                | 11.0                  | —                    | 700           | TH2                     |
| PE-5159X                                       | 1:1:1             | 1.0                            | 77                             | 19                 | 5.6                               | 3.1                                 | 1.1                 | 1.1                   | 1.2                  | 700           | TH5                     |
| PE-5158X                                       | 1CT:1CT           | 1.0                            | 77                             | 21                 | 3.2                               | 2.5                                 | 1.8                 | 1.8                   | —                    | 700           | TH3                     |
| PE-5163X                                       | 1CT:1CT           | 10.0                           | 252                            | 60                 | 2.5                               | 16.7                                | 14.0                | 14.0                  | —                    | 700           | TH3                     |

\*NOTE: for Electrostatically Shielded Transformers, C<sub>WW</sub> is measured with shield corrected to guard voltage.

## Schematics



# GENERAL PURPOSE TRANSFORMERS

## 500 mW Pulse

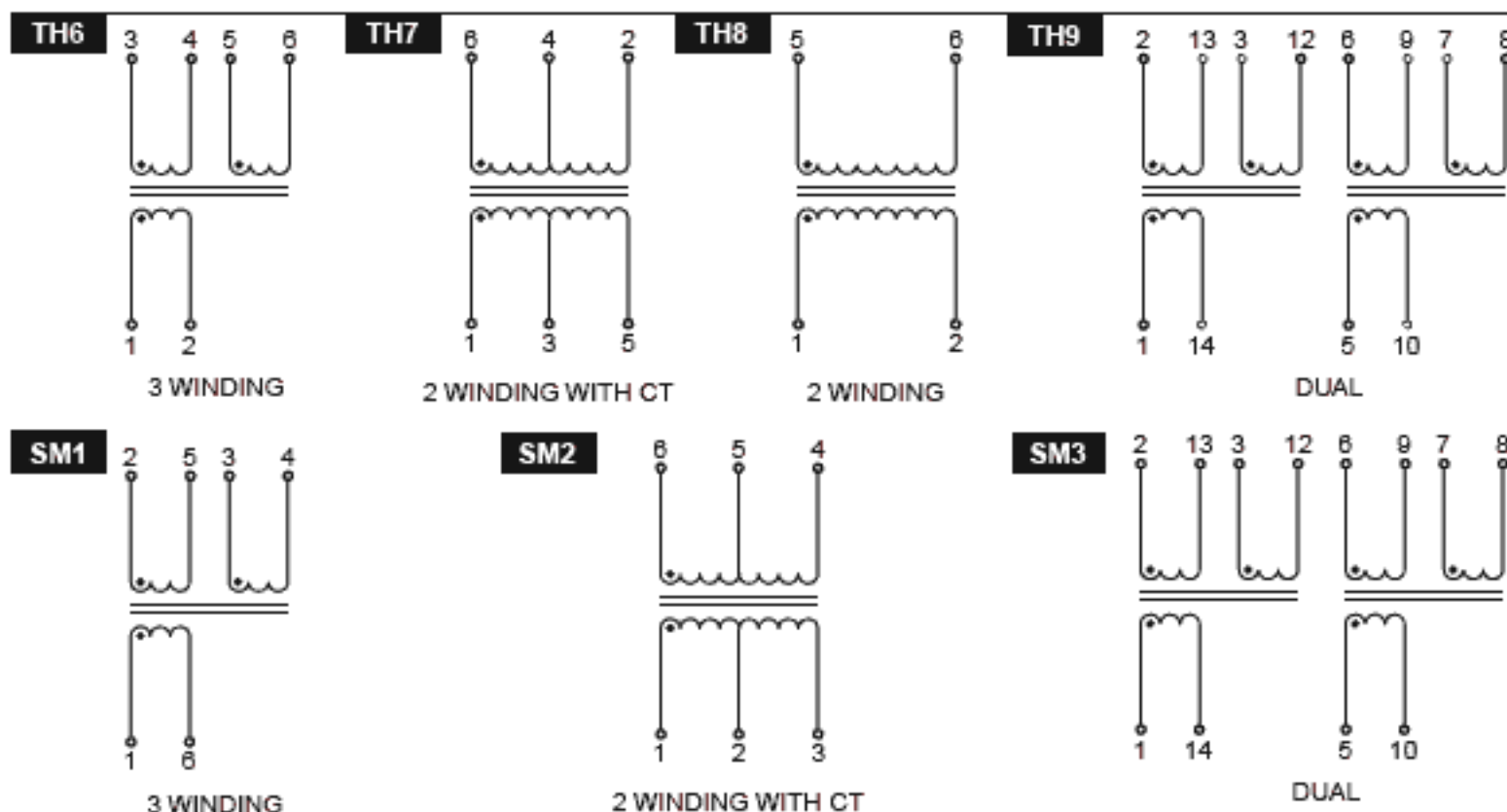


Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Part Number                      | Turns Ratio (±5%) | Primary Sine Wave OCL (mH MIN) | Primary ET-Constant (V-μs MIN) | Rise Time (ns MAX) | PRI/SEC C <sub>W</sub> (pF MAX) | Leakage Inductance PRI/SEC (μH MAX) | DCR Primary (Ω MAX) | DCR Secondary (Ω MAX) | DCR Tertiary (Ω MAX) | Hi Pot Vrms | Schematic Package Style |
|----------------------------------|-------------------|--------------------------------|--------------------------------|--------------------|---------------------------------|-------------------------------------|---------------------|-----------------------|----------------------|-------------|-------------------------|
| <b>500 mW PULSE TRANSFORMERS</b> |                   |                                |                                |                    |                                 |                                     |                     |                       |                      |             |                         |
| PE-5760                          | 1:1:1             | 5.0                            | 25.0                           | 10.5               | 70                              | 1.3                                 | 3.9                 | 3.9                   | 3.9                  | 500         | TH6                     |
| PE-5761                          | 1:1:1             | 2.0                            | 16.0                           | 8.2                | 37                              | 0.8                                 | 2.5                 | 2.5                   | 2.5                  | 500         | TH6                     |
| PE-5762                          | 1:1:1             | 0.5                            | 8.5                            | 5.3                | 32                              | 0.4                                 | 1.3                 | 1.3                   | 1.3                  | 500         | TH6                     |
| PE-5763                          | 1:1:1             | 0.2                            | 5.0                            | 4.2                | 18                              | 0.3                                 | 0.9                 | 0.9                   | 0.9                  | 500         | TH6                     |
| PE-5764                          | 1:1:1             | 0.05                           | 5.2                            | 5.6                | 18                              | 0.5                                 | 1.3                 | 1.3                   | 1.3                  | 500         | TH6                     |
| PE-5769                          | 2:1:1             | 0.5                            | 8.5                            | 5.6                | 11                              | 1.1                                 | 1.3                 | 0.7                   | 0.7                  | 500         | TH6                     |
| PE-8270                          | 1CT:1CT           | 2.0                            | 16.0                           | —                  | 37                              | 0.8                                 | 2.5                 | 2.5                   | —                    | 700         | TH7                     |
| PE-8271                          | 1CT:1CT           | 0.5                            | 8.5                            | —                  | 32                              | 0.4                                 | 1.3                 | 1.3                   | —                    | 500         | TH7                     |
| PE-8272                          | 1CT:1CT           | 0.2                            | 5.0                            | 4.2                | 18                              | 0.3                                 | 0.9                 | 0.9                   | —                    | 700         | TH7                     |
| PE-8276                          | 2CT:1CT           | 2.0                            | 16.0                           | —                  | 19                              | 1.8                                 | 2.5                 | 1.4                   | —                    | 500         | TH7                     |
| PE-8277                          | 2CT:1CT           | 0.5                            | 8.5                            | —                  | 12                              | 1.2                                 | 1.4                 | 0.8                   | —                    | 700         | TH7                     |
| PE-65502                         | 1.25:1            | 1.2                            | 10.0                           | 10.0               | 35                              | 0.8                                 | 0.8                 | 0.7                   | —                    | 1500        | TH8                     |
| 23Z81                            | 1:1:1 dual        | .085                           | 2.5                            | 3.0                | 9.5                             | 0.2                                 | 0.20                | —                     | —                    | 500         | TH9                     |
| 66Z1203                          | 1:1:1             | —                              | 25.0                           | 10.5               | 60                              | 1.3                                 | 3.9                 | 3.9                   | 3.9                  | 500         | TH6                     |
| 66Z1212                          | 2:1:1             | —                              | 16.0                           | 11.0               | 19                              | 1.8                                 | 2.5                 | 1.4                   | 1.4                  | 500         | TH6                     |
| PE-5762M                         | 1:1:1             | 0.5                            | 5.0                            | 4.2                | 25                              | 0.3                                 | 0.9                 | 0.9                   | 0.9                  | 1500        | SM1                     |
| PE-5763M                         | 1:1:1             | 0.2                            | 4.0                            | 3.5                | 18                              | 0.2                                 | 0.7                 | 0.7                   | 0.7                  | 1500        | SM1                     |
| PE-5769M                         | 2:1:1             | 0.5                            | 5.0                            | 4.2                | 18                              | 0.3                                 | 0.9                 | 0.45                  | 0.45                 | 1500        | SM1                     |
| PE-8271M                         | 1CT:1CT           | 0.5                            | 5.0                            | 4.2                | 18                              | 0.3                                 | 0.9                 | 0.9                   | —                    | 1500        | SM2                     |
| PE-8272M                         | 1CT:1CT           | 0.2                            | 4.0                            | 3.5                | 14                              | 0.2                                 | 0.7                 | 0.7                   | —                    | 1500        | SM2                     |
| PE-8277M                         | 2CT:1CT           | 0.5                            | 5.0                            | 6.0                | 18                              | 0.7                                 | 0.9                 | 0.45                  | —                    | 1500        | SM2                     |
| 23Z81SM                          | 1:1:1 dual        | .085                           | 2.5                            | 3.0                | 9.5                             | 0.2                                 | 0.20                | —                     | —                    | 500         | SM3                     |
| 23Z87SM                          | 1:1:1             | .085                           | 2.5                            | 3.0                | 9.5                             | 0.2                                 | 0.20                | —                     | —                    | 500         | SM2                     |

NOTE: To order Tape & Reel packaging for surface mount parts, add the suffix "T" to the part number. (Example: PE-5760MT). The "T" will appear on all paper work, but will not be marked on parts.

### Schematics



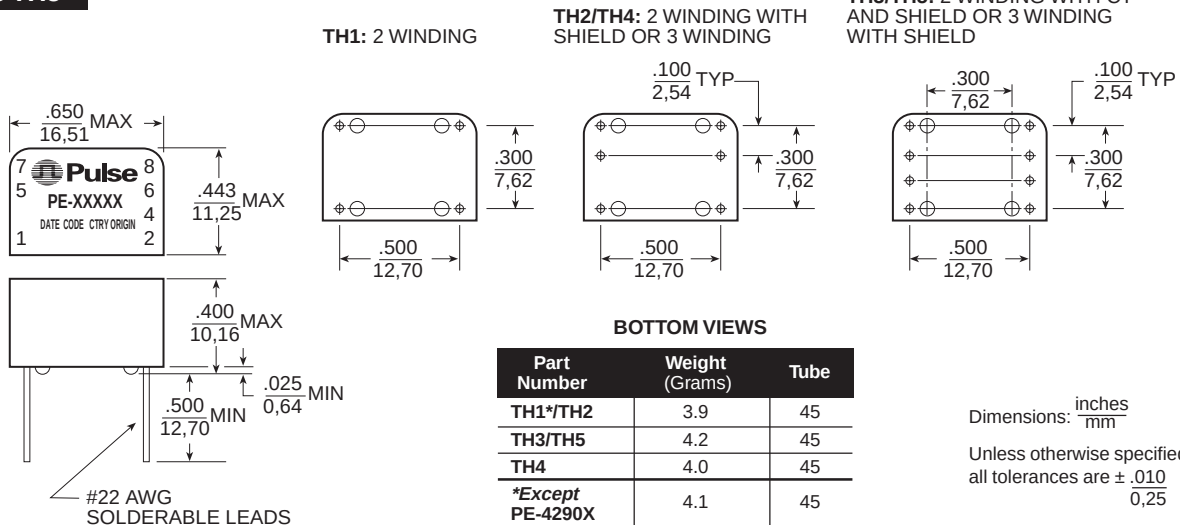
# GENERAL PURPOSE TRANSFORMERS

## 2 Watt Pulse, Electrostatically Shielded, and 500 mW Pulse Transformers

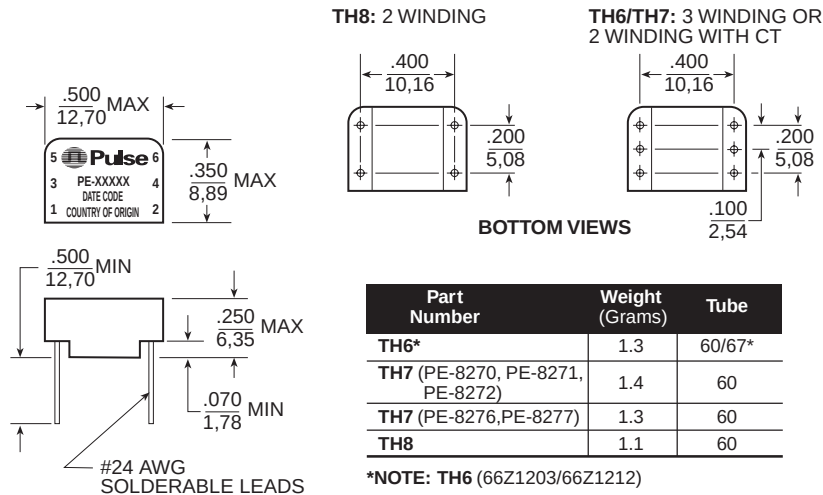


### Mechanicals

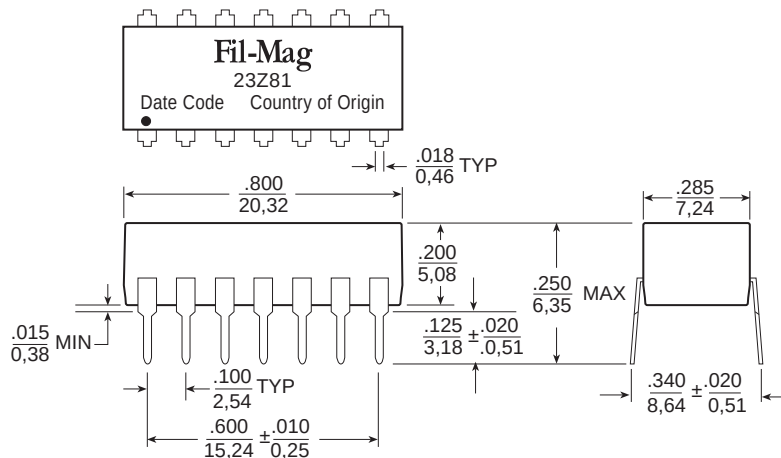
#### TH1 to TH5



#### TH6 to TH8



#### TH9



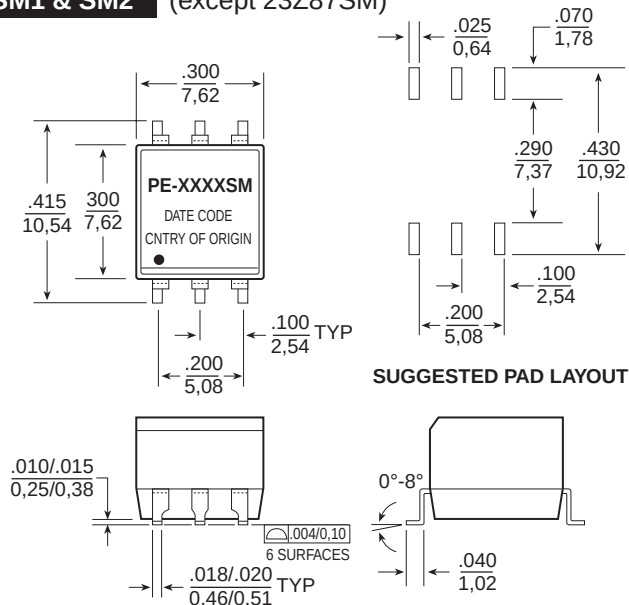
# GENERAL PURPOSE TRANSFORMERS

2 Watt Pulse, Electrostatically Shielded,  
and 500 mW Pulse Transformers

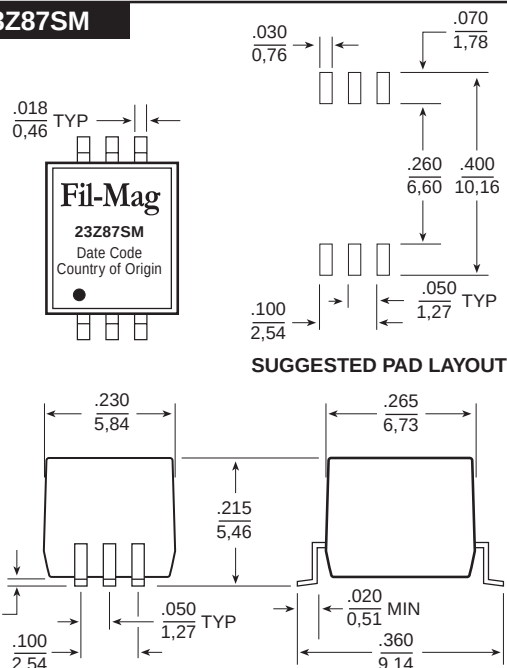


## Mechanicals

### SM1 & SM2 (except 23Z87SM)



### 23Z87SM

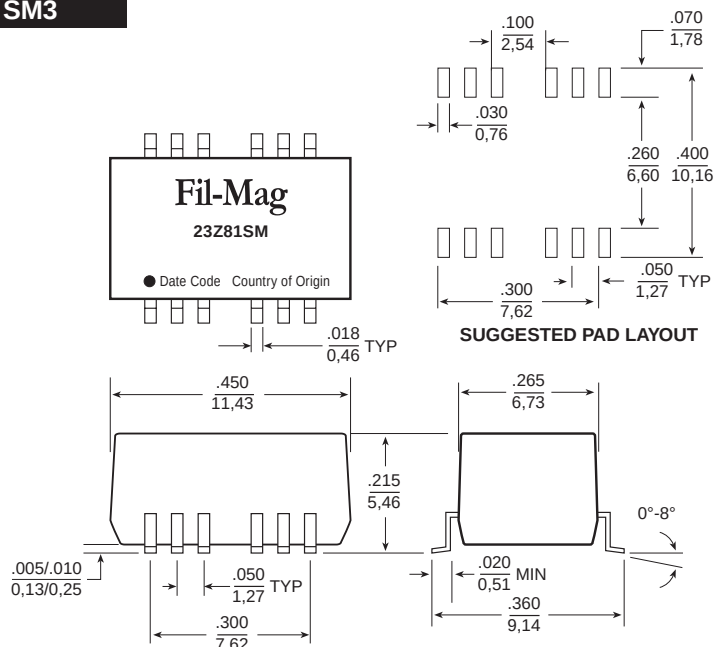


| Part           | Weight (Grams) | Tape & Reel | Tube |
|----------------|----------------|-------------|------|
| SM1            | 0.6            | 500         | 65   |
| SM2:           |                |             |      |
| PE-8271M       | 0.7            | 500         | 60   |
| PE-8272M       | 0.7            | 500         | 65   |
| PE-8277M       | 0.6            | 500         | 65   |
| Except 23Z87SM | 0.5            | 750         | 100  |

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

Dimensions:  $\frac{\text{inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.005}{0,13}$

### SM3

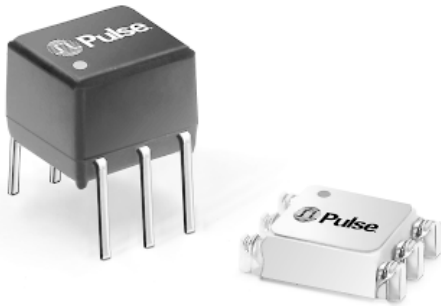


Weight ..... 0.9 grams  
 Tube ..... 50/tube  
 Tape & Reel ..... 750/reel

Dimensions:  $\frac{\text{inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.005}{0,13}$

# GENERAL PURPOSE TRANSFORMERS

## RF Pulse



- Designed for use in 50  $\Omega$  Wideband IC applications
- Characterized for Pulse and wide band use at 50  $\Omega$  impedance
- Standard 6-pin DIP package or *ThinSet* surface mount package

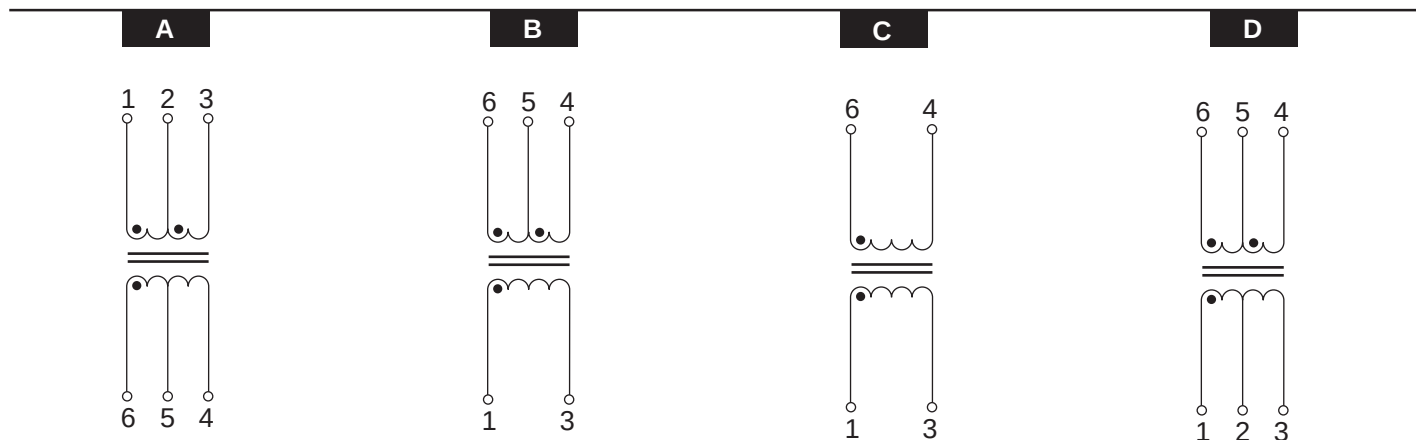
### Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Part Number    | Turns Ratio (±5%) | Primary Pulse Inductance (μH MIN) | Primary ET-Constant (v-μS MIN) | PRI/SEC C <sub>ww</sub> (pF MAX) | PRI/SEC Leakage Inductance (μH MAX) | Primary DCR (Ω MAX) | Secondary DCR (Ω MAX) | Bandwidth for -3 dB Loss<br>Low Freq    High Freq<br>(MHz)        (MHz) |     | Schematic/Package Style |
|----------------|-------------------|-----------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------|-----------------------|-------------------------------------------------------------------------|-----|-------------------------|
| SURFACE MOUNT* |                   |                                   |                                |                                  |                                     |                     |                       |                                                                         |     |                         |
| PE-65457       | 1CT:1CT           | 80                                | 2.5                            | 15                               | 0.18                                | 0.20                | 0.20                  | 0.05                                                                    | 90  | A / SMT1                |
| PE-65459       | 1CT:2CT           | 40                                | 2.0                            | 15                               | 0.14                                | 0.20                | 0.30                  | 0.05                                                                    | 110 | A / SMT1                |
| 23Z247SMD      | 1:1CT             | 80                                | 2.5                            | 15                               | 0.18                                | 0.20                | 0.20                  | 0.05                                                                    | 90  | B / SMT2                |
| THROUGH HOLE   |                   |                                   |                                |                                  |                                     |                     |                       |                                                                         |     |                         |
| PE-62245A      | 1:1               | 40                                | 2.5                            | 12                               | 0.15                                | 0.20                | 0.20                  | 0.05                                                                    | 110 | C / TH10                |
| PE-62246A      | 1CT:1CT           | 40                                | 2.5                            | 15                               | 0.18                                | 0.20                | 0.20                  | 0.05                                                                    | 90  | D / TH10                |
| PE-62250A      | 1:2CT             | 25                                | 2.0                            | 15                               | 0.14                                | 0.20                | 0.30                  | 0.10                                                                    | 110 | B / TH10                |
| PE-62252A      | 1:√2CT            | 40                                | 2.5                            | 18                               | 0.20                                | 0.20                | 0.30                  | 0.05                                                                    | 80  | B / TH10                |
| PE-62254A      | 1:4CT             | 10                                | 1.25                           | 10                               | 0.10                                | 0.20                | 0.60                  | 0.20                                                                    | 60  | B / TH10                |

#### \*NOTE:

To order Tape & Reel packaging for surface mount parts, add the suffix "T" to the part number. (Example: PE-65457T). The "T" will appear on all paper work, but will not be marked on parts.

## Schematics



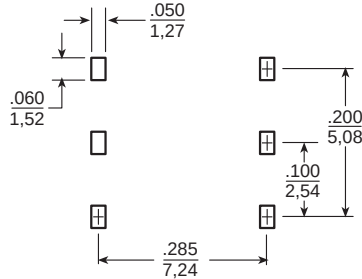
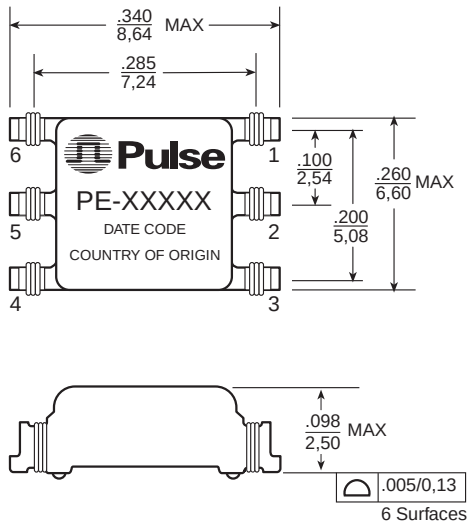
# GENERAL PURPOSE TRANSFORMERS

## RF Pulse



### Mechanicals

#### SMT 1



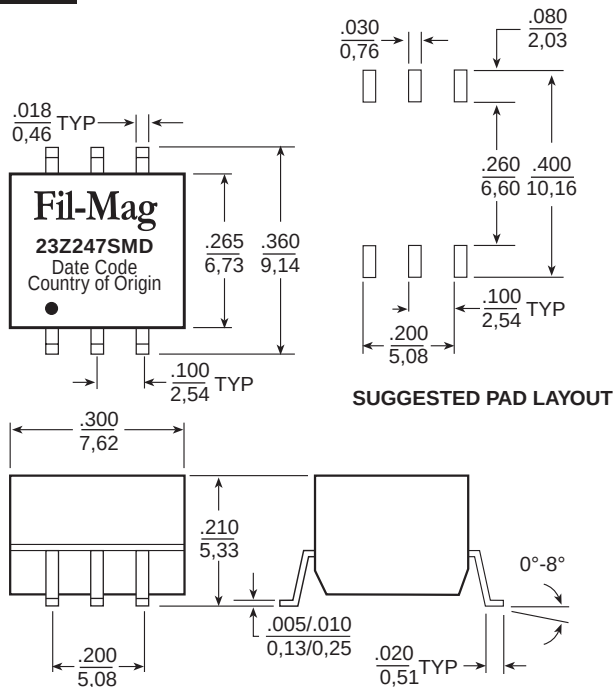
SUGGESTED PAD LAYOUT

|                   | PE-65457  | PE-65459  |
|-------------------|-----------|-----------|
| Weight .....      | 0.2 grams | 0.1 grams |
| Tube .....        | 60/tube   | 60/tube   |
| Tape & Reel ..... | 1500/reel | 1500/reel |

Dimensions: inches  
mm

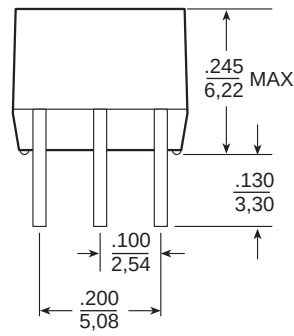
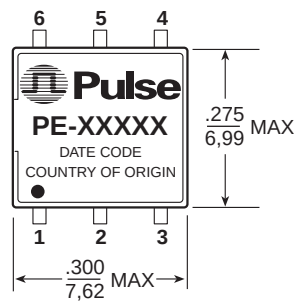
Unless otherwise specified, all tolerances are  $\pm .010$   
 $0.25$

#### SMT 2



SUGGESTED PAD LAYOUT

#### TH10



Weight ..... 0.5 grams  
Tube ..... 76/tube  
Tape & Reel ..... 750/reel

Dimensions: inches  
mm

Unless otherwise specified, all tolerances are  $\pm .005$   
 $0.13$

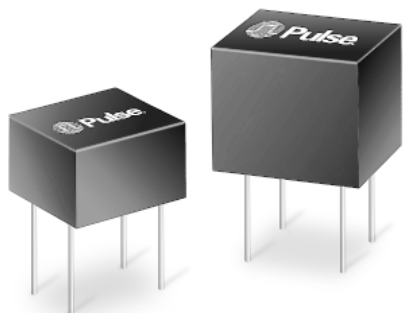
Weight ..... 0.6 grams  
Tube ..... 65/tube

Dimensions: inches  
mm

Unless otherwise specified, all tolerances are  $\pm .010$   
 $0.25$

# GENERAL PURPOSE TRANSFORMERS

## Control Transformers



-  Recognized component – Underwriter's Laboratories, Inc.
-  High dielectric strength capability for industrial applications
-  High ET – product allows long pulse width

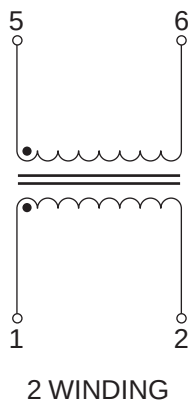
**Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C**

| Part Number | Turns Ratio (±10%) | Primary Sine Wave OCL (mH MIN) | Primary ET-Constant (V-μs MIN) | PRI/SEC Cww (pF MAX) | PRI/SEC Leakage Inductance | Primary DCR (Ω MAX) | Secondary DCR (Ω MAX) | Hi Pot* PRI/SEC (Vrms) | Schematic/Package Style |
|-------------|--------------------|--------------------------------|--------------------------------|----------------------|----------------------------|---------------------|-----------------------|------------------------|-------------------------|
| PE-61001    | 1:1                | 1.0                            | 360                            | 30                   | 15.0                       | 2.8                 | 3.1                   | 1600                   | A/TH11                  |
| PE-61003    | 2:1                | 0.2                            | 180                            | 24                   | 5.0                        | 1.4                 | 0.9                   | 1600                   | A/TH11                  |
| PE-61006    | 1:1:1              | 0.2                            | 180                            | 30                   | 5.0                        | —                   | 1.5                   | 1600                   | B/TH11                  |
| PE-61007    | 1:1:1              | 1.0                            | 360                            | 36                   | 12.0                       | 2.8                 | 3.6                   | 1600                   | B/TH11                  |
| PE-61008    | 1:1:1              | 5.0                            | 866                            | 42                   | 80.0                       | 6.0                 | 7.2                   | 1600                   | B/TH11                  |
| PE-61014    | 1:1                | 1.0                            | 700                            | 36                   | 26.0                       | 3.0                 | 3.2                   | 2400                   | A/TH12                  |
| PE-61015    | 1:1                | 5.0                            | 1500                           | 42                   | 130.0                      | 6.3                 | 7.0                   | 2400                   | A/TH12                  |
| PE-61017    | 2:1                | 1.0                            | 700                            | 36                   | 24.0                       | 3.0                 | 2.0                   | 2400                   | A/TH12                  |
| PE-61018    | 2:1                | 5.0                            | 1500                           | 42                   | 125.0                      | 6.3                 | 4.0                   | 2400                   | A/TH12                  |
| PE-61019    | 1:1:1              | 0.2                            | 290                            | 34                   | 4.7                        | 1.4                 | 1.5                   | 2400                   | B/TH12                  |
| PE-61023    | 2:1:1              | 1.0                            | 700                            | 40                   | 27.0                       | 3.0                 | 2.0                   | 2400                   | B/TH12                  |

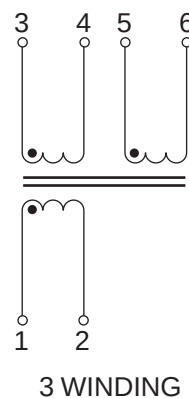
\*NOTE: PE-61001–PE-61023 Hi Pot SEC/SEC 300 Vrms. Average Power Rating: 2 Watts. UL-478 Recognized, File Number E52661.

## Schematics

**A**



**B**





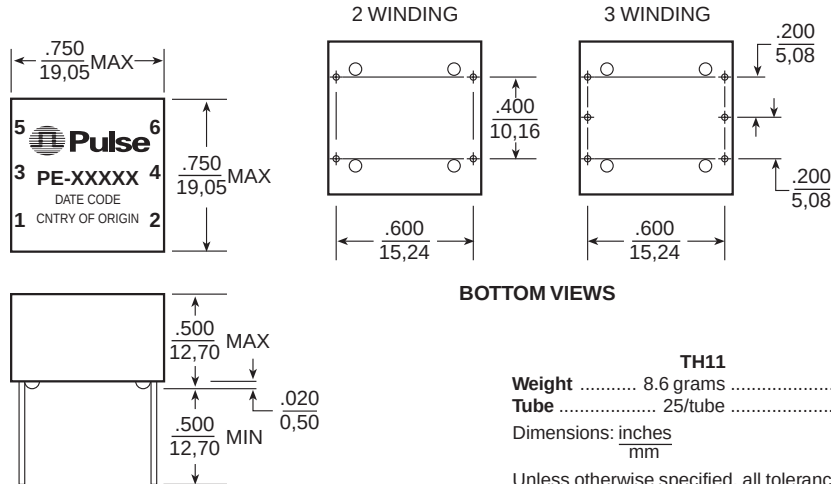
# GENERAL PURPOSE TRANSFORMERS

## Control Transformers



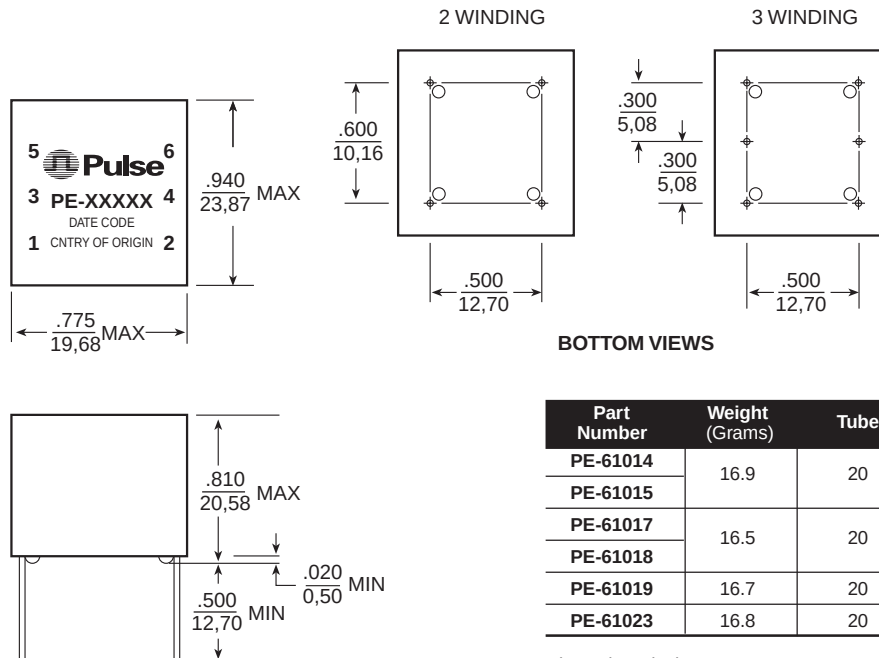
### Mechanicals

#### TH11



|                                                                        | TH11      | Except PE-61003 |
|------------------------------------------------------------------------|-----------|-----------------|
| Weight                                                                 | 8.6 grams | 8.2 grams       |
| Tube                                                                   | 25/tube   | 25/tube         |
| Dimensions: inches                                                     |           |                 |
| mm                                                                     |           |                 |
| Unless otherwise specified, all tolerances are $\pm \frac{.010}{0,25}$ |           |                 |

#### TH12



#### BOTTOM VIEWS

| Part Number | Weight (Grams) | Tube |
|-------------|----------------|------|
| PE-61014    | 16.9           | 20   |
| PE-61015    |                |      |
| PE-61017    | 16.5           | 20   |
| PE-61018    |                |      |
| PE-61019    | 16.7           | 20   |
| PE-61023    | 16.8           | 20   |

Dimensions: inches  
mm

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

### For More Information :

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