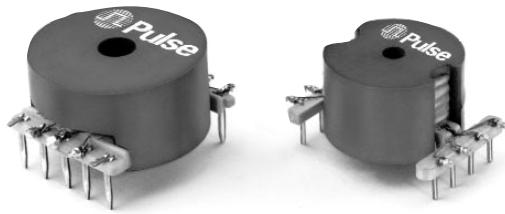


# ISDN U-INTERFACE TRANSFORMERS

For Applications with 2B1Q and 4B3T Coding



-  Matched to leading transceiver ICs
-  Parts meet ANSI T1.601-1992 and ETSI ETR 080
-  Transformer models with 2000 Vrms to 3000 Vrms minimum isolation
-  Recognized to UL1459 and UL1950
-  BABT certified to EN60950

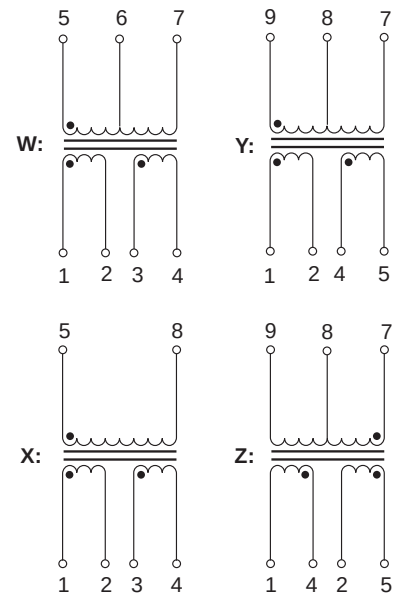
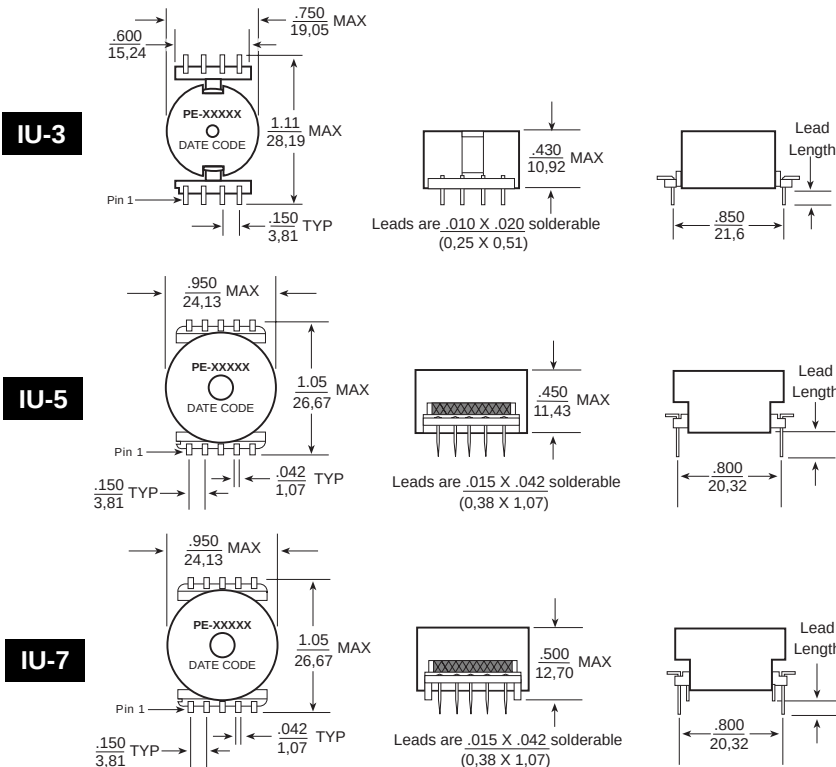
## Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Isolation Voltage (Vrms MIN) | Part Number | Turns Ratio Line:Chip (±3%) | Line Side Pins | OCL Line side (mH) | DCR Line Side (Ω) | DCR Chip Side (Ω) | IDC (mA) | Lead Length               | Package/ Schematic  |
|------------------------------|-------------|-----------------------------|----------------|--------------------|-------------------|-------------------|----------|---------------------------|---------------------|
| 2000 Vrms                    | PE-65575*   | 1.65:1                      | (1-4)          | 13.0-18.0          | 5.2 ±15%          | 3.0 ±15%          | 50       | 0.15 ± 0.03 (3,81 ± 0,76) | IU-3/W <sup>4</sup> |
|                              | PE-65578    | 1.32:1                      | (1-4)          | 7.0-8.3            | 2.4 MAX           | 2.7 MAX           | 55       | 0.15 ± 0.03 (3,81 ± 0,76) | IU-3/X              |
|                              | PE-65579    | 2.00:1                      | (1-5)          | 25.5-28.5          | 11.6 MAX          | 6.4 MAX           | 60       | 0.17 ± 0.04 (4,32 ± 1,02) | IU-5/Y              |
|                              | PE-65581    | 1.50:1                      | (4-2)          | 14.2-15.8          | 16.0 MAX          | 2.5 MAX           | 60       | 0.17 ± 0.04 (4,32 ± 1,02) | IU-5/Z              |
|                              | PE-65583    | 1.50:1                      | (4-2)          | 25.6-29.0          | 20.0 MAX          | 3.0 MAX           | 60       | 0.16 ± 0.03 (4,06 ± 0,76) | IU-5/Z <sup>2</sup> |
|                              | PE-65584    | 1.50:1                      | (1-5)          | 25.6-29.0          | 20.0 MAX          | 3.0 MAX           | 60       | 0.17 ± 0.04 (4,32 ± 1,02) | IU-5/Y <sup>2</sup> |
| 2500 Vrms                    | PE-68628*   | 1.25:1                      | (1-5)          | 26.5-29.5          | 12.0 MAX          | 7.0 MAX           | 80       | 0.16 ± 0.03 (4,06 ± 0,76) | IU-5/Y <sup>2</sup> |
|                              | PE-68631    | 1.50:1                      | (4-2)          | 25.6-29.0          | 20.0 MAX          | 3.0 MAX           | 60       | 0.13 ± 0.03 (3,30 ± 0,76) | IU-7/Z <sup>2</sup> |
|                              | PE-68681    | 1.50:1                      | (1-5)          | 25.6-28.4          | 20.0 MAX          | 3.0 MAX           | 60       | 0.13 ± 0.03 (3,30 ± 0,76) | IU-7/Y <sup>2</sup> |
| 3000 Vrms                    | PE-68668*   | 1.25:1                      | (1-5)          | 26.5-29.5          | 13.0 MAX          | 7.5 MAX           | 80       | 0.13 ± 0.03 (3,30 ± 0,76) | IU-7/Y <sup>2</sup> |
|                              | PE-68669*   | 1.65:1                      | (1-4)          | 13.0-18.0          | 5.2 ±15%          | 3.0 ±15%          | 50       | 0.13 ± 0.03 (3,30 ± 0,76) | IU-3/W              |

NOTE: For surface mount versions of these parts, please see data sheet T614. New small surface mount package available. Contact Pulse Application Engineering at (619) 674-8100 for more information. \*Operating temperature range: -40°C to 85°C.

## Mechanicals

## Schematics



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

U.S.A: TEL 619 674 8100 • EUROPE: TEL 44 1483 401700 • ASIA: TEL 65 287 8998 • WEB: <http://www.pulseeng.com>

T603.D (12/98)



**Pulse**  
A TECHNITROL COMPANY

| Return Loss (2B1Q)<br>(10 and 25 KHz) | Longitudinal Balance<br>(2B1Q) | Longitudinal Balance<br>(4B3T)       | Surge Voltage Resistability<br>(ALL) |
|---------------------------------------|--------------------------------|--------------------------------------|--------------------------------------|
| 20 dB MIN                             | 281 Hz to 40 KHz    55 dB MIN  | 5 KHz                      20 dB MIN | Metallic @ 800 V Peak    10/700 µsec |
| —                                     | Above 40 KHz    -20 dB/decade  | 20 KHz-150 KHz    40 dB MIN          | Long. @ 2400 V Peak    10/560 µsec   |
| —                                     | —                      —       | 1 MHz                      36 dB MIN | —                              —     |

| Company  | Chip                  | Coding | Transformer<br>2000 Vrms<br>Isolation | Transformer<br>High Isolation<br>Models | Echo<br>Cancellation<br>Hybrid |
|----------|-----------------------|--------|---------------------------------------|-----------------------------------------|--------------------------------|
| Motorola | MC145472              | 2B1Q   | PE-65579                              | —                                       | —                              |
| Motorola | MC145572              | 2B1Q   | PE-68628                              | PE-68668                                | —                              |
| National | TP 3410               | 2B1Q   | PE-65583 <sup>(1)</sup>               | PE-68631                                | —                              |
|          |                       |        | PE-65584 <sup>(1)</sup>               | PE-68681                                | —                              |
| Siemens  | PEB 2091              | 2B1Q   | PE-65575 <sup>(4)</sup>               | PE-68669                                | PE-36005 or<br>PE-36005W       |
| Siemens  | PEB 2090<br>PEB 20901 | 4B3T   | PE-65578                              | —                                       | —                              |
| Thomson  | SD 5411               | 2B1Q   | PE-65581                              | —                                       | —                              |

|           |               |     |          |
|-----------|---------------|-----|----------|
| PE-36005  | Through Hole  | THT | DP-14/TH |
| PE-36005W | Surface Mount | SMT | DP-14/SM |

1. PE-65583 and PE-65584 are electrically identical, but have different schematics.
2. Pin 6 removed for keying to printed circuit board.
3. Common Mode Chokes for EMI reduction are also available. Recommended part numbers are either PE-68624 (surface mount) or PE-65944 (through hole) – see data sheet **G002**.
4. Additional model PE-65585, equivalent to PE-65575, has standoffs. Maximum height is .475 (12.07).

**DP-14**

Top view dimensions: .810 MAX, 14, 8, 1, 7. Markings: PE-XXXXX (DATE CODE), (COUNTRY OF ORIGIN).

Side view dimensions: .200 MAX, .120 MIN, .100 TYP, .600 MAX, 1, 7. Mounting style: TH.

Leads are .010 X .020 solderable (0,25 X 0,51)

Suggested SM layout dimensions: .300, .387, .030, .100, .080, .040, .170, .340, .040. Mounting style: SM.

**Dimensions:**  $\frac{\text{Inches}}{\text{mm}}$

|                  | DP-14TH   | DP-14SM   |
|------------------|-----------|-----------|
| Weight . . . . . | 1.5 grams | 1.5 grams |
| Tube . . . . .   | 25/tube   | 25/tube   |

## Distributor

**T603.D (12/98)**