

# ISDN U-Interface Transformers

For both 2B1Q & 4B3T ISDN U-Interface Applications

Excellent Longitudinal Balance

Designed for use with leading Transceiver Chips

Meets key parameters of ANSI T1.601-1992

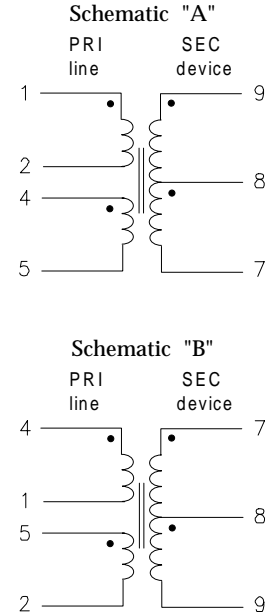
Isolation 2000 V<sub>RMS</sub> & 3000 V<sub>RMS</sub> Minimum

Surface Mount Versions Available

| Manufacturer Name | I.C. P/N       | Transformer P/N | High Isolation P/N |
|-------------------|----------------|-----------------|--------------------|
| Motorola          | MC145472       | T-13209         | T-13223            |
| Motorola          | MC145572       | T-13207         | T-13221            |
| National          | TP 3410        | T-13211         | T-13224            |
| National          | TP 3410        | T-13212         | T-13220            |
| Siemens           | PEB 2091       | T-13214         | T-13222            |
| Siemens           | PEB 2090/20901 | T-13215         | T-13225            |
| SGS-Thomson       | SD 5411        | T-13210         | T-13219            |

## Electrical Specifications at 25°C

| Part Number | Turns Ratio ( $\pm 3\%$ ) | OCL <sup>(1,3)</sup> Pri $\pm 6\%$ (mH) | Line Side Pins | DCR <sup>(1)</sup> max. ( $\Omega$ ) | DCR <sup>(2)</sup> max. ( $\Omega$ ) | DC Bias (mA) | Coding | Isolation (V <sub>RMS</sub> ) | Schem. Style <sup>(3)</sup> |
|-------------|---------------------------|---|----------------|--------------------------------------|--------------------------------------|--------------|--------|-------------------------------|-----------------------------|
| T-13207     | 1.25:1                    | 28.0                                    | (1-5)          | 12                                   | 8                                    | 80           | 2B1Q   | 2000                          | A                           |
| T-13209     | 2.00:1                    | 27.0                                    | (1-5)          | 11.6                                 | 6.4                                  | 60           | 2B1Q   | 2000                          | A                           |
| T-13210     | 1.50:1                    | 15.0                                    | (4-2)          | 16                                   | 2.5                                  | 60           | 2B1Q   | 2000                          | B                           |
| T-13211     | 1.50:1                    | 27.0                                    | (4-2)          | 20                                   | 3.0                                  | 60           | 2B1Q   | 2000                          | B                           |
| T-13212     | 1.50:1                    | 27.0                                    | (1-5)          | 20                                   | 3.0                                  | 60           | 2B1Q   | 2000                          | A                           |
| T-13214     | 1.65:1                    | 15.5                                    | (1-5)          | 6.0                                  | 3.5                                  | 60           | 2B1Q   | 2000                          | A                           |
| T-13215     | 1.32:1                    | 7.7                                     | (1-5)          | 2.4                                  | 2.7                                  | 60           | 4B3T   | 2000                          | A                           |
| T-13219     | 1.50:1                    | 15.0                                    | (4-2)          | 18                                   | 3.0                                  | 60           | 2B1Q   | 3000                          | B                           |
| T-13220     | 1.50:1                    | 27.0                                    | (1-5)          | 20                                   | 3.0                                  | 60           | 2B1Q   | 3000                          | A                           |
| T-13221     | 1.25:1                    | 25.5                                    | (1-5)          | 13                                   | 9.0                                  | 80           | 2B1Q   | 3000                          | A                           |
| T-13222     | 1.65:1                    | 15.5                                    | (1-5)          | 6.0                                  | 3.5                                  | 60           | 2B1Q   | 3000                          | A                           |
| T-13223     | 2.00:1                    | 27.0                                    | (1-5)          | 12.6                                 | 7.4                                  | 60           | 2B1Q   | 3000                          | A                           |
| T-13224     | 1.50:1                    | 27.0                                    | (4-2)          | 20                                   | 3.0                                  | 60           | 2B1Q   | 3000                          | B                           |
| T-13225     | 1.32:1                    | 7.7                                     | (1-5)          | 2.7                                  | 3.0                                  | 60           | 4B3T   | 3000                          | A                           |



- Line Side.
- Device Side
- OCL Tested @10 kHz / 700 mV, pins 2&4 shorted for Schem. "A"; pins 1&5 shorted for Schem. "B."
- For all parts unused Pin # 6 can be removed for keying to printed circuit board. Add suffix "-9"

**Longitudinal Balance (2B1Q Coding)**  
 281 Hz to 40 KHz      55 dB min.  
 > 40 KHz              -20 dB/decade

**Longitudinal Balance (4B3T Coding)**  
 5 KHz                  20 dB min.  
 20 KHz to 150 KHz    40 dB min.  
 1 MHz                  36 dB min.

**Return Loss**  
 10 and 25 KHz      20 dB min.

Operating Temp. Range -40°C to +85°C

Primary is Line Side / Secondary is Chip Side

**Surge Voltage Capability:**  
 Metallic Voltage: 800 V peak, 10/700  $\mu$ S  
 Longitudinal Voltage: 2400 V peak, 10/560  $\mu$ S

## Package Physical Dimensions in inches (mm)

