**OVERVIEW**

NXP’s voltage level translators offer lower voltage and superior performance in pin-to-pin compatible packages with industry-standard footprints. These bi-directional level translators address the various applications that need a transition of voltage signals through multiple domains. With auto-direction sensing and the ultra-low 0.95 V minimum supply, these families match up well with the latest low-voltage µCs and FPGAs.

NTS030x “smart one-shot” translators deliver better operation in higher capacitance systems with minimal overshoot compared to previous generations of level translators and are optimized for I²C-bus and other open-drain applications.

**APPLICATIONS**

- Laptops
- Smart phones
- Communications systems
- Set-top boxes
- Low-voltage edge computing
- Smart cards: debit/credit

**KEY FEATURES**

- **Simple to Use**
  - Dual-supply translating transceiver family with auto direction sensing enables bi-directional voltage level translation without need for direction control
- **Highly Robust**
  - IEC61000-4-2 class 4, 8 kV contact ESD protection for B-side port (only NTS030xE)
  - “Smart one-shot” functionality with 50 ns pulse and EMI rejection
- **Wide Voltage Level Translation**
  - NTS VCC(A): 0.95 V to 3.6 V and VCC(B): 1.65 V to 5.5 V
  - Voltage nodes 1.2 V, 1.8 V, 2.5 V, 3.3 V, and 5.0 V
- **Complete Family**
  - Updated family of 2, 4 and 8-channel level translators
  - Multiple pin-compatible package options
NTS030X FAMILY FEATURES

- Dual supplies to pair with low-voltage digital IC and higher voltage peripherals
- Auto-sensing bi-directional—no direction pin required
- Best for open drain outputs like I2C-bus but can also be used for push-pull applications to 20 Mbit/s
- Integrated pull-up resistors reduce component cost
- Longer one shot for faster low-to-high transition in high-capacitance applications

VOLTAGE LEVEL TRANSLATOR SELECTION

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<thead>
<tr>
<th>2-channel</th>
<th>4-channel</th>
<th>8-channel</th>
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| FET w/ one-shot output(s) | NTS0302JK | NTS0304EPW  
NTS0304EUK | NTS0308EPW |