

5-Volt to 3.3-Volt Translator is First with Integrated Diode

DALLAS (May 28, 1996) -- With the industry's first single-chip voltage translator from Texas Instruments, designers of PCs, notebooks, workstations, and networking and telecommunication equipment can use both 5V and low-power 3.3V parts in the same system without slowing down the performance of the system or consuming valuable board space. Since 5V devices are usually less expensive than their 3.3V counterparts, developers are able to bring to market the most cost effective system by using both 3.3V and 5V parts when appropriate. When this occurs, a voltage translator is needed.

TI's new CBTD3384 is based on very fast cross bar technology and has an integrated diode for voltage translation. Previous to the CBTD3384, voltage shifting required at least three discrete devices, a switch, an external diode and a resistor. Because of its low resistance and simple switching mechanism, the CBTD3384 has a minimal propagation delay of just 250 picoseconds. The CBTD3384 offers bi-directional voltage translation between 5V TTL and 3.3V LVTTL devices, or uni-directional shifting from 5V CMOS chips to 3.3V LVTTL devices. The CBTD3384 is organized as two five-bit switches, providing 10 bits of high-speed TTL-compatible bus switching.

Key Technical Features

- Integrated diode for one-chip voltage level shifting
- Very fast cross bar technology has a propagation delay of just 250picoseconds
- 10-bit, five ohm switch connection between two ports
- TTL-compatible input and output levels
- Organized as two five-bit switches with separate output-enabled inputs
- Package options: plastic small-outline, shrink small-outline and thin shrink small-outline packages

Pricing and Availability

The CBTD3384 is available now from TI and its authorized distributors. Packaged in 24-pin plastic small-outline, shrink small-outline and thin shrink small-outline carriers, the suggested resale pricing in quantities of 1,000 is \$0.90 each.