

LTC News for Immediate Release

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2 & 4-Channel I²C Multiplexers Provide Capacitive Buffering

MILPITAS, CA – September 8, 2005 – Linear Technology Corporation introduces the LTC4305 and LTC4306, 2-wire bus multiplexers that provide capacitive isolation when connecting an upstream I²C bus to a desired combination of downstream busses. The software-controlled LTC4305 multiplexes two channels, whereas the LTC4306 splits the I²C bus into four sub-branches. The I²C multiplexing allows for reliable switching of multiple system management buses and multiple I²C devices. Multiplexing allows address expansion as well as addressing one of multiple identical devices, thus resolving address conflict issues. These devices have applications in all levels of computers, including workstations, servers and desktop PCs.

Many I²C and SMBus devices operate at different voltage levels, yet they are constrained to share a common bus. The LTC4305 and LTC4306 are supply independent; therefore, each channel can be pulled to a supply voltage ranging from 2.2V to 5.5V, regardless of the ICs' supply voltage. This level translation is performed without the need of a second supply pin or a second pair of input pull-up resistors. The downstream channels are provided with two (LTC4305) and four (LTC4306) Alert inputs for fault reporting. If a stuck bus is detected, a selectable programmable timeout circuitry will automatically break the data and clock bus connections are enabled.

The SDA and SCL pins of both ICs feature $\pm 10\text{kV}$ ESD protection for ruggedness. When activated, the rise time accelerator circuitry sources currents into the 2-wire bus pin to reduce rise times. Each IC allows for 27 distinct bus addresses that are configurable by using the three tri-state address pins. The LTC4306 also features two general purpose input/output (GPIO) pins that can be configured as inputs, open-drain outputs, or push-pull outputs.

The LTC4305 is available in 16-lead SSOP and 4mm x 5mm DFN packages. The LTC4306 is available in 24-lead SSOP and 4mm x 5mm QFN packages. Offered over the commercial and industrial temperature ranges, pricing for the LTC4305/LTC4306 begins at \$2.80 each for 1000-piece quantities.

Summary of Features: LTC4305, LTC4306

- 1:2 2-Wire Multiplexer/Switch (LTC4305)
- 1:4 2-Wire Multiplexer/Switch (LTC4306)
- Supply Independent Bidirectional Buffers
- Programmable Disconnect from Stuck Bus
- Rise Time Accelerator Circuitry
- SMBus Compatible ALERT Response Protocol
- $\pm 10\text{kV}$ Human Body Model ESD Ruggedness
- 16-lead SSOP and 4mm x 5mm DFN packages (LTC4305)
- 24-lead SSOP and 4mm x 5mm QFN packages (LTC4306)

COMPANY BACKGROUND: Linear Technology Corporation was founded in 1981 as a manufacturer of high performance linear integrated circuits. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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