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Cable Drop Compensator Corrects Remote Load Regulation Errors without Sense Wires

MILPITAS, CA – April 17, 2013 – Linear Technology Corporation announces the [LT6110](#) cable drop compensator, a new device that improves voltage regulation at remote loads without the need for Kelvin sense wires. The LT6110, a new component for the designer, has been architected for use with most types of voltage regulators and can provide several volts of load regulation compensation.

The LT6110 will compensate for the voltage drop due to resistance in a wire, circuit board trace or cable and can improve regulation at the load by a factor of 10. It operates with supply voltages that range from 2V to 50V, making it suitable for high power USB, Power over Ethernet (PoE), remote instrumentation and remote industrial applications. The LT6110 reduces costs by eliminating sense wires which may be prone to misconnection or damage and it makes load regulation independent of wire size or length.

The LT6110 operates by measuring the load current with a sense resistor and injecting current into the existing regulator's feedback loop to raise the output voltage. It is designed to work with standard feedback circuits, as well as new "current source" reference devices such as the LT3080. For load currents less than 3A, the internal 20mOhm sense resistor simplifies the design. Wide bandwidth achieves fast transient compensation of load steps, and in most cases the savings in wire and labor are more than the cost of the LT6110.

According to Robert Dobkin, Vice President of Engineering and CTO for Linear Technology, "The LT6110 is a unique power supply component that gives designers a new degree of freedom by improving voltage regulations without the need of sense wires."

The LT6110 is fully specified for operation from –40°C to 125°C and is offered in SOT23 and 2mm x 2mm DFN packages. It is now available, priced starting at \$1.29 each in 1,000-piece quantities. For more information, visit www.linear.com/product/LT6110


Photo Caption: Improve Voltage Regulation at Remote Loads without Sense Wires

Summary of Features: LT6110

- Operates with Almost All Existing Voltage Regulators
- Correction Set with a Single Resistor
- High Side Current Sensing:
 - Integrated 20ohm Sense Resistor for up to 3A
 - Ability to Use an External Sense Resistor
- 300μV Maximum Input Offset Voltage
- Output Current Accuracy of 1% Maximum
- 30μA Maximum Supply Current
- 2V to 50V Supply Range
- Fully Specified from –40°C to 125°C
- Available in Low Profile (1mm) ThinSOT™ & 2mm x 2mm DFN Packages

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μModule® subsystems, and wireless sensor network products. For more information, visit www.linear.com

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