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10Amp Backup Power Controller IC Provides Uninterrupted Power & Charges/Monitors 1 to 4 Supercapacitor Series Stacks

MILPITAS, CA – May 19, 2014 – Linear Technology Corporation introduces the LTC3350, a supercapacitor charger and backup controller IC that includes all of the features necessary to provide a complete, standalone capacitor-based backup power solution. Many applications require reliable short-term uninterrupted power in the event of a main power failure. Examples include data backup for solid state drives (SSDs) and nonvolatile dual in-line memory modules (NVDIMMs), power fail alarms in medical and industrial applications, as well as a host of other "dying gasp" power fail indicators. The LTC3350 provides all PowerPath™ control, capacitor stack charging and balancing, and capacitor "health" monitoring to ensure that the backup system is capable of reliable operation.

The LTC3350 features a wide 4.5V to 35V input voltage range and over 10A of charge/backup current capability. The device also provides balancing and overvoltage protection for a series stack of one to four supercapacitors. The LTC3350's synchronous step-down controller drives N-channel MOSFETs for constant current/voltage charging of the capacitor stack at up to 5V per cell. In backup mode, the step-down converter runs in reverse as a synchronous step-up DC/DC to deliver power from the supercapacitor stack to the system supply to be backed up. The LTC3350's dual ideal diode controller uses N-channel MOSFETs for low loss power paths from the input and supercapacitors to the backup system supply. The device is ideal for high current 12V ride-through supplies and short-term uninterruptible power supplies (UPS) for servers, mass storage and high availability systems.

The LTC3350 contains an accurate 14-bit analog-to-digital converter (ADC), which continuously monitors input and output voltage and current. In addition, the internal measurement system monitors parameters associated with the backup capacitors themselves, including capacitor stack voltage, capacitance and stack ESR (equivalent series resistance) to ensure adequate energy storage and power delivery during backup. By monitoring the actual capacitance of the backup supercapacitors, the LTC3350 provides longer capacitor life by enabling the system to set the capacitor voltage to a minimum value while ensuring the required backup energy is maintained. All system parameters and fault status can be monitored via a two-wire I^2C interface, and alarm levels can be set to alert the system to a sudden change in any of these measured parameters.

The LTC3350 is available in a thermally enhanced 38-lead, low-profile (0.75mm) 5mm x 7mm QFN package. The device operates over a –40°C to 125°C junction temperature range and is available from stock. Pricing starts at $5.25 each for the E grade in 1,000-piece quantities. For more information, visit www.linear.com/product/LTC3350

Photo Caption: Backup Power Controller UPS & Supercap Charger/Monitor IC

Summary of Features: LTC3350

- High Efficiency Synchronous Step-Down CC/CV Charging of One to Four Series Supercapacitors
- Step-Up Mode in Backup Provides Greater Utilization of Stored Energy in Supercapacitors
- 14-Bit ADC for Monitoring System Voltages/Currents, Capacitance & ESR
- Active Overvoltage Protection Shunts
- Internal Active Balancers - No Balance Resistors
- V_{IN}: 4.5V to 35V, V_{CAP}(n): Up to 5V per Capacitor, Charge/Backup Current: 10A+
- Programmable Input Current Limit Prioritizes System Load Over Capacitor Charge Current
- Dual Ideal Diode PowerPath™ Controller
- All N-FET Charger Controller & PowerPath Controller
- Compact 38-Lead 5mm × 7mm QFN Package

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 over 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

Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937