



2.5A Monolithic Active Cell Balancer with Telemetry Interface

MILPITAS, CA – December 16, 2013 – Linear Technology Corporation announces the [LT8584](#), a monolithic flyback DC/DC converter designed to actively balance high voltage stacks of batteries. These battery stacks are commonly found in electric and hybrid vehicles as well as fail-safe power supplies and energy storage systems. Because these batteries are stacked in series, the lowest capacity battery will limit the entire battery stack's run-time. Ideally, the batteries would be perfectly matched, but this is often not the case and generally gets worse as the batteries age. Passive energy balancing offers no improved run-time as it dissipates the added energy of the higher capacity batteries to match the lowest one. Conversely, the LT8584 offers high efficiency active balancing, which redistributes the charge from the stronger cells (higher voltage) to charge the weaker cells during discharge. This enables the weaker cells to continue to supply the load, extracting 96% of the entire stack capacity where passive balancing usually extracts approximately 80%.

The LT8584 includes an integrated 6A/50V power switch, enabling an average discharge current of 2.5A while offering a simple and compact application circuit. Its isolated balancing design can return charge to the top of the battery stack or to any combination of cells in the stack or even to a 12V battery used as an alternator replacement. The LT8584 runs off of the cell that it is discharging, removing the need for complicated biasing schemes. It integrates seamlessly via the enable pin with the LTC680x family of battery stack voltage monitoring ICs without any additional software. The LT8584 also provides system telemetry, including current, resistance

and temperature monitoring when used with the LTC680x family of parts. When the LT8584 is disabled, it draws less than 20nA of quiescent current from the battery. For applications that require higher balancing current, multiple LT8584s can be paralleled. It is packaged in a 16-lead TSSOP and is both FMEA and ISO 26262 compliant.

The LT8584EFE is packaged in 16-lead TSSOP and is priced starting at \$2.95 each. An industrial temperature version, the LT8584IFE is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced starting at \$3.25 each. An automotive temperature version, the LT8584HFE is tested and guaranteed to operate from a -40°C to 150°C operating junction temperature and is priced starting at \$3.50 each. All pricing is for 1,000 piece quantities and all versions are available from stock. For more information, visit

www.linear.com/product/LT8584


Photo Caption: Actively Balances High Voltage Battery Stacks

Summary of Features: LT8584

- 2.5A Typical Average Cell Discharge Current
- Integrated 6A/50V Power Switch
- Integrates Seamlessly with LTC680x Family: No Additional Software Required
- Selectable Current & Temperature Monitors
- Ultralow Quiescent Current in Shutdown
- Engineered for ISO 26262 Compliant Systems
- FMEA Compatible
- Isolated Balancing:
 - o Can Return Charge to Top of Stack
 - o Can Return Charge to Any Combination of Cells in Stack
 - o Can Return Charge to 12V Battery for Alternator Replacement
- Can Be Paralleled for Greater Discharge Capability
- All Quiescent Current in Operation Taken from Local Cell
- 16-Lead TSSOP 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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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