



By driving the charger's enable input (EN), the comparators' open-drain outputs inhibits charging when the battery temperature is out of range. As an alternative, you can substitute a dual comparator with push-pull CMOS outputs (such as the MAX9032) if you also add a tiny, SOT-323 dual diode, as shown in dashed lines.

The dual comparator shown and the MAX9032 are available in tiny SOT23 packages, and both offer a built-in hysteresis of 2mV or 4mV respectively.

IC2 is a single-cell lithium-ion (Li+) battery charger that can be powered directly from a USB port or from an external supply up to 6.5V. The accuracy of its battery-regulation voltage (0.5%) allows maximum utilization of the battery capacity.

The charger's internal FET delivers up to 500mA of charging current, and its SELV input can be configured for charging a 4.1V or 4.2V battery. The SELI input sets the charge current to either 100mA or 500mA, and an open-drain output (CHG) indicates the charge status. For near-dead batteries, a preconditioning capability soft-starts the cell before charging. Other safety features include continuous monitoring of voltage and current, and initial checking for fault conditions before charging.

#### Related Parts

<a href="#">LMX393</a>	General-Purpose, Low-Voltage, Single/Dual/Quad, TinyPack™ Comparators	<a href="#">Free Samples</a>
<a href="#">MAX1811</a>	USB-Powered Li+ Charger	<a href="#">Free Samples</a>
<a href="#">MAX9032</a>	Low-Cost, Ultra-Small, Single/Dual/Quad Single-Supply Comparators	<a href="#">Free Samples</a>

#### More Information

For Technical Support: <http://www.maximintegrated.com/support>

For Samples: <http://www.maximintegrated.com/samples>

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Application Note 2769: <http://www.maximintegrated.com/an2769>

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