

MAX17710

Energy-Harvesting Charger and Protector

General Description

The MAX17710 is a complete system for charging and protecting micropower-storage cells such as Infinite Power Solution's THINERGY® microenergy cells (MECs). The IC can manage poorly regulated sources such as energy-harvesting devices with output levels ranging from 1µW to 100mW. The device also includes a boost regulator circuit for charging the cell from a source as low as 0.75V (typ). An internal regulator protects the cell from overcharging.

Output voltages supplied to the target applications are regulated using an efficient adjustable low-dropout (LDO) linear regulator with selectable voltages of 3.3V, 2.3V, or 1.8V. The output regulator operates in a selectable high-power or low-power mode to minimize drain of the cell. Internal voltage protection prevents the cell from overdischarging.

The device is available in an ultra-thin, 3mm x 3mm x 0.5mm 12-pin Ultra TDFN package.

Applications

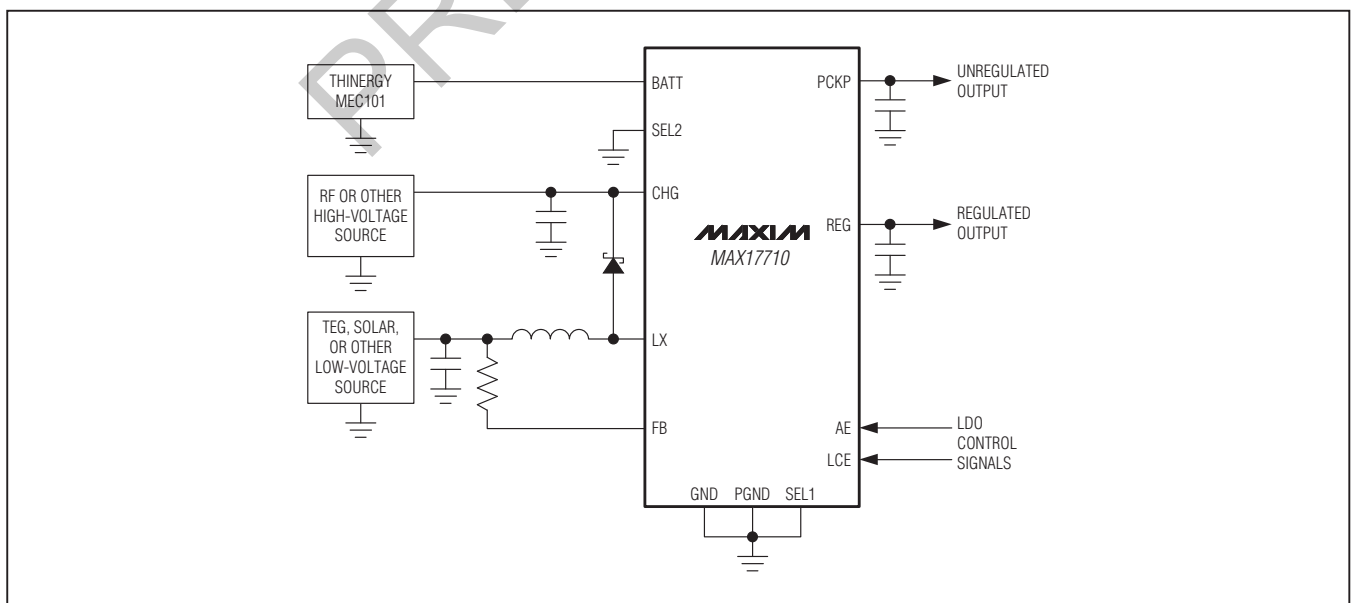
Powered/Smart Cards	Medical Devices
Remote Wireless Sensors	High-Temperature Applications
Memory and Real-Time Clock Backup	Military/DoD and Aerospace
Semiactive RFID Tags	Toys

- ◆ **Integrated Power-Management IC for Energy Storage and Load Management**
- ◆ **Lithium Charger**
 - 1nA Standby I_{QBATT}**
 - 625nA Linear Charging**
 - 1µW Boost Charging**
- ◆ **Lithium Cell Undervoltage Protection**
- ◆ **Charger Overvoltage Shunt Protection**
- ◆ **1.8V, 2.3V, or 3.3V LDO (150nA I_{QBATT})**
- ◆ **Lithium Cell Output Buffering**
- ◆ **Ultra-Thin, 3mm x 3mm x 0.5mm TDFN Package**

[Ordering Information](#) appears at end of data sheet.

For related parts and recommended products to use with this part, refer to: www.maxim-ic.com/MAX17710.related

Simplified Operating Circuit



THINERGY is a registered trademark of Infinite Power Solutions, Inc.

Energy-Harvesting Charger and Protector

Package Information

For the latest package outline information and land patterns (footprints), go to www.maxim-ic.com/packages. Note that a "+", "#", or "-" in the package code indicates RoHS status only. Package drawings may show a different suffix character, but the drawing pertains to the package regardless of RoHS status.

PACKAGE TYPE	PACKAGE CODE	OUTLINE NO.	LAND PATTERN NO.
12 UTDFN-EP	V1233N+1	21-0451	90-0339

Ordering Information

PART	TEMP RANGE	PIN-PACKAGE
MAX17710G+U	-40°C to +85°C	12 UTDFN-EP*
MAX17710G+T	-40°C to +85°C	12 UTDFN-EP*

+Denotes a lead(Pb)-free/RoHS-compliant package.

T = Tape and reel.

*EP = Exposed pad.

PRELIMINARY