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MAX1780

Advanced Smart Battery Pack Controller

MAX1780 Advanced Battery Pack Is a Smart Battery Pack Supervisor That Integrates a User-Programmable Microcontroller Core, Coulomb Counting Fuel Gauge, and Primary Pack Protector

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Status

All versions are No Longer Available. See [Ordering Information](#) for recommended replacements.

Data Sheet

No Longer Available

Description

The MAX1780 Advanced Battery Pack Controller is a smart battery pack supervisor that integrates a User programmable Microcontroller Core, Coulomb-Counter-based Fuel Gauge, a multi-channel Data Acquisition Unit, a high-speed SPI Interface, and a Master/Slave SMBus Interface. The 8-bit, RISC, Microcontroller core is user programmable, and provides battery pack designers with complete flexibility in developing fuel gauging and control algorithms. The Data Acquisition Unit can measure individual cell voltages to within 50mV, total battery stack voltage (up to 20.48V), and chip internal/external temperature.

The user adjustable overcurrent comparators, along with individual cell voltage measurements, allow the MAX1780 to eliminate a separate primary pack protection IC. The MAX1780 can be directly connected to 2 to 4 series Lithium Ion cells, and supplies itself through a fully integrated 3.4V lowdrop out linear regulator.

Key Features

- User Programmable Using an External EEPROM
- Accurate Fuel Gauge Uses V-to-F Method
 - < 1µV Input Offset Voltage
 - No External Calibration Required
- Eliminates Separate Primary Protection IC
 - 50mV Accurate Individual Cell Voltage
- Measurements
 - Built in Protection MOSFET Gate Drivers
 - Over Charge & Discharge Current Protection
- Fully Integrated LDO (V_{IN} = 4V to 28V)
- 8-bit RISC Microcontroller Core
 - On-board 1.5K ROM & 0.5K Program RAM
 - 144 Bytes Data Memory
 - Fast Start-up 3.5MHz Instruction Oscillator
 - Watch Dog Timer
- Hardware SMBus with Master Capability
- GPIO Port and High Voltage LED Drivers
- Typical Operating Currents < 200µA Achievable
- Typical Shutdown Current of 1nA

Applications/Uses

- Data Acquisition
- Proprietary Battery Packs
- Remote Data Logging
- SMBus™ Battery Packs

Reliability Reports

Show FIT data for:

Request Reliability Report for:

Software/Models

none

Ordering Information

Filters: Part Number: Package: Temperature: Tape and Reel Sample

Part Number	Free Sample	Buy	Status	Recommended Replacement	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis
MAX1780AECM		N/A	No Longer Available	MAX1782	LQFP;48 pin;82.8 mm ² Outline Drawing: 21-0054 (PDF) Land Pattern: 90-0093 (PDF) Use pkgcode/variation: C48-6*	-40°C to +85°C	See data sheet
MAX1780AECM-T		N/A	No Longer Available	MAX1782	LQFP;48 pin Land Pattern: Not Available	-40°C to +85°C	See data sheet
MAX1780AEVKIT		N/A	No Longer Available	MAX1782	KIT; Land Pattern: Not Available		See data sheet

Notes:

1. Other options and links for purchasing parts are listed at: <http://www.maxim-ic.com/sales>.
2. **Didn't Find What You Need?** Ask our applications engineers. Expert assistance in finding parts, usually within one business day.
3. Part number suffixes: T or T&R = tape and reel; += RoHS/lead-free; # = RoHS/lead-exempt; -D = drypack; -U/+U on DS parts = cut tape. More: See [Full Data Sheet](#) or [Maxim Product Naming Conventions](#).
4. * Some packages have variations, listed on the drawing. "PkgCode/Variation" tells which variation the product uses. Note that "+", "#", "-" in the part number suffix describes RoHS status. Package drawings may show a different suffix character.

Similar Products by Function

MAX1782 Advanced Smart Battery-Pack Controller
 MAX1665S, MAX1665V, Lithium-Ion Battery Pack Protector
 MAX1665X

More Information

New Product Press Release[[2000-12-27](#)]

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