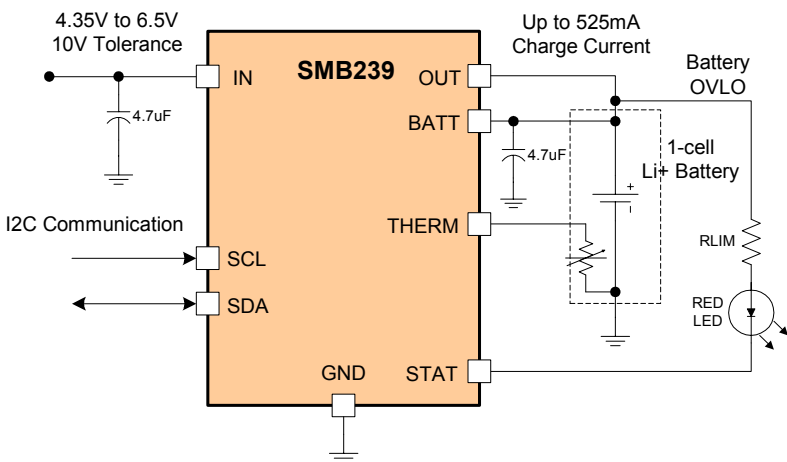


# SMB139/239 – World's Smallest Battery Chargers offer Highest Level of Design Flexibility

## Highlights

- 1.3mm x 2.1mm Chip Scale Package Trims PCB Footprint by 69%
- Configurable Charging Parameters for Static & Dynamic Design Flexibility
- Advanced Protection Features Simplify Compliance with Safety Standards

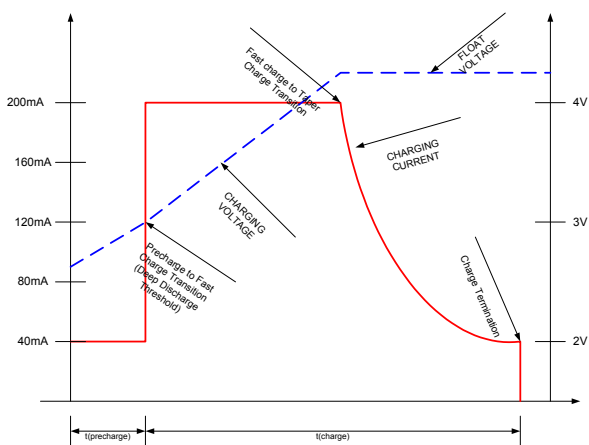


## Features

- +4.35V to +6.5V Input Range
- OV Protection & 10V Hold-off Voltage
- Charge Current: 210/525mA (SMB139/239)
- Tiny 1.3 x 2.1 CSP package
- I<sup>2</sup>C/SMBus Serial Interface
- Fully Programmable Algorithm in EEPROM
  - Fast-charge, Pre-charge Current
  - Termination Current
  - Float Voltage
  - Pre-Charge Threshold
  - Cell Temperature Safety Limits
  - Safety Timer Limits
  - STAT Output Behavior
- Charge Status & Fault Indicator & Registers
- Battery Over-voltage Monitor
- Battery Cell Temperature Monitor
- HW-based Charge Current Level Selector
- Option for Controlling Charge Initiation based on Battery Voltage Level
  - ±1% Float Voltage Accuracy
  - Very Low Reverse Leakage Current

## Applications

- Bluetooth & Stereo Headsets
- Digital Still Cameras
- Flash-based MP3 Players
- Noise Cancelling Headphones
- Wrist Watches & PDAs
- Robotic Toys
- Wireless Video Game Controllers



## Configurable Charging Parameters Allow Unparalleled Static & Dynamic Design Flexibility:

- Pre-Charge Current
- Pre-Charge to Fast Charge Voltage
- Fast Charge Current
- Float Voltage
- Termination Current
- Temperature Limits
- Charge Safety Timers

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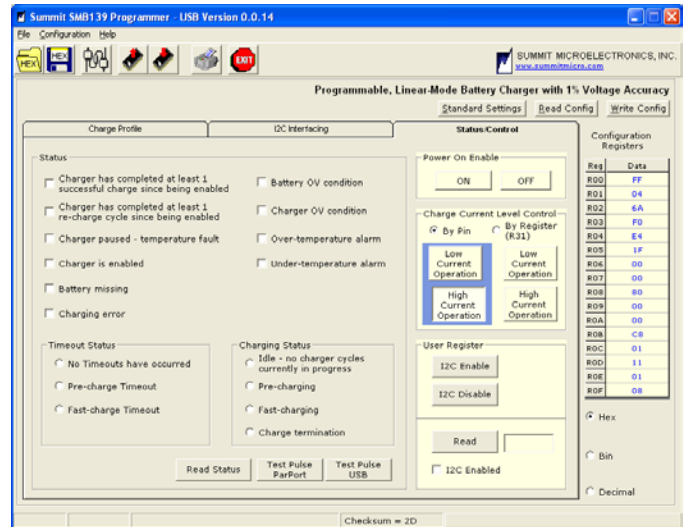
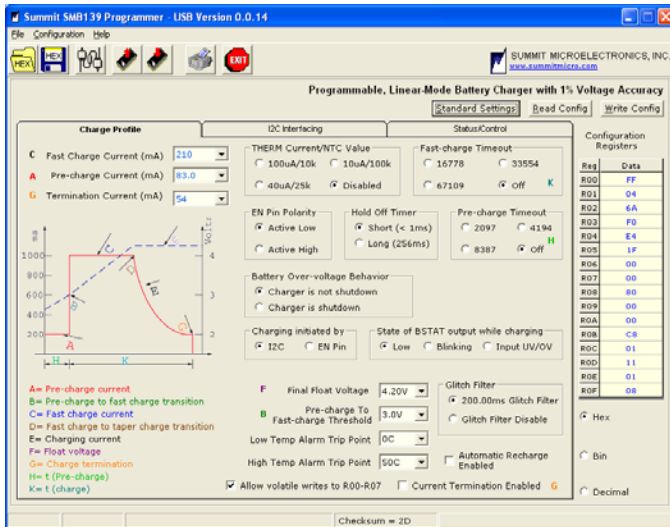
"Programmable Power for a Digital World"

# SMB139/239 – World’s Smallest Battery Chargers offer Highest Level of Design Flexibility

*GUI allows easy programming of all functions and parameters in a real-time environment*

## Battery Charger Configuration

## Real-time Status/Fault Control



## Complete Programmable Battery Charger Offering

Features	SMB135	SMB137B	SMB339	SMB139/239
Battery Charging Type	Switch-mode	Switch-mode	Switch-mode	Linear
Input Voltage - Operating/Hold-Off (V)	6.5/10	6.2/18	6.2/18	6.5/10
Maximum Charge Current (mA)	900	1500	1250	210/525
Switching Frequency (MHz)	1.25	3	3	N/A
TurboCharge™	Manual	Automatic	Automatic	N/A
CurrentPath™		YES		
Automatic Power Source Detection		YES	YES	
Automatic Input Current Limit		YES	YES	
Low Battery Recovery Mode (LBR™)		YES		
USB On-The-Go Mode		YES	YES	
Programmable Charging Algorithm	YES	YES	YES	YES
Input Current Limit		YES	YES	N/A
OV/UV/OC Protection	YES	YES	YES	YES
Battery Pack Temperature Monitor	YES	YES	YES	YES
IEEE 1725 Compliant	YES	YES	YES	YES
Package Type	CSP-15, QFN-32	CSP-30	CSP-20, QFN-24	CSP-15/CSP-8



*“Programmable Power for a Digital World”*