

## MCP1630 Low-Cost NiMH Battery Charger Reference Design

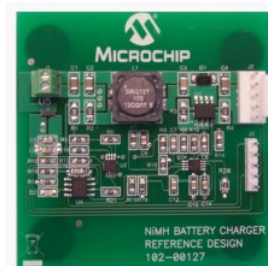
Part Number: MCP1630RD-NMC1

**BUY  
IT NOW**



Share

Low Cost NiMH Battery Charger board preprogrammed to charge 3 NiMH cells. Charge profile and number of batteries can be changed with firmware. The design uses the MCP1630 High-Speed Analog PWM combined with the PIC microcontroller. Charge current is initially set for 1.35A fast charge.



### Features

### Package Contents

- Programmed parameters - modified in firmware

- Factory Settings:

- Preconditioning Charge Current = 170 mA







- Preconditioning Threshold = 3 V

- Constant Current Fast Charge = 1.35 A

- Charge Termination based on  $\Delta V_{BATT} / \Delta \text{time}$

- Charge Termination based on  $\Delta T_{BATT} / \Delta \text{time}$ , with external thermistor installed

- Top Off Charge Current = 130 mA for 1 Hour
- Overvoltage protection (battery removed)
- Overcharge protection to prevent damaging the battery
- Overcurrent protection in the event of a shorted battery
- Battery reversal protection
- Input short circuit protection
- Overtemperature protection to prevent the battery from reaching too high a temperature during charge
- Soft-start capability by holding the reference voltage low during power-up
- The MCP1630 Low-Cost NiMH Battery Charger has the flexibility to optimize the charging algorithm for new battery technology, different battery chemistries or different battery pack configurations
- Proprietary features can be added by modifying the firmware contained in the PIC12F683
- The factory-programmed source code is available
- Ability to adapt to environmental effects, such as ambient temperature

AppNotes	Last Updated	Size	
<a href="#">AN960 - New Components and Design Methods Bring Intelligence to Battery Charger Applications</a>	11/19/2004 3:24:56 PM	293KB	
Documents	Last Updated	Size	
<a href="#">MCP1630/MCP1630V Data Sheet</a>	2/5/2013 2:41:28 PM	345KB	
<a href="#">MCP6291/1R/2/3/4/5 Datasheet</a>	11/13/2007 3:01:52 PM	662KB	
<a href="#">MCP1630 Low-Cost NiMH Battery Charger Reference Design Gerbers</a>	2/27/2007 4:51:57 PM	118KB	
<a href="#">MCP1630 Low-Cost NiMH Battery Charger Reference Design User's Guide</a>	2/19/2007 2:56:38 PM	800KB	
<a href="#">MCP1630 Low-Cost NiMH Battery Charger Reference Design Firmware</a>	2/19/2007 2:50:39 PM	16KB	
<a href="#">MCP1702 2uA Low Dropout Positive Voltage Regulator</a>	10/26/2005 2:37:29 PM	157KB	