

TC110 Boost Converter Demo Board

Part Number: TC110DM

Devices Supported: TC110, MCP73832

Summary Description:

The TC110 Boost Converter Demo Board can charge Li-Ion Batteries with single-cell Alkaline battery or 2-cell Alkaline battery at maximum 500 mA constant current. The TC110 Boost Converter Demo Board is used to evaluate Microchip's TC110 PFM/PWM Step-Up DC/DC Controller.

The TC110 is a step-up (Boost) switching controller that can regulate output voltage with a typical start-up voltage of 0.9V. The TC110 Boost Converter Demo Board also includes a MCP73832 Miniature Single-Cell, Fully Integrated Li-Ion, Li-Polymer Charge Management Controllers. Microchip's MCP73832 is a highly advanced linear charge management controllers for use in space-limited, cost-sensitive applications.

The TC110 Boost Converter Demo Board is a ready to use solution for portable applications when no DC plug is available. The TC110 Boost Converter Demo Board can efficiently transfer energy from Alkaline batteries to Li-Ion battery pack.



Features:

- Single-Cell Li-Ion Battery Charger, operates stand alone without firmware added for economic and fast pace design cycle.
- Charges 1-cell Li-Ion battery pack from 0.9V to 3.0V Input (Battery types from 1-cell to 2-cell Alkaline batteries or similar rating NiCd and NiMH).
- Regulates output dc voltage to 5.0V from TC110 (TC110 is available in 3.0V, 3.3V, and 5V).
- 300 kHz fixed frequency (TC110 is available in 100 kHz and 300 kHz fixed frequency).
- ON/OFF button used to enable and disable system.
- 3 position toggle switch to select single, dual battery input or disable.
- LED ON/OFF to show the charging activity and standby mode.
- Easy adjust constant charging current with single resistor modification (The default current is 200 mA to optimize 1-cell Alkaline battery, but can go up to 500 mA for fast charging cycle while running in 2-cell Alkaline battery).
- MCP738312 is used to charge Li-Ion battery pack at constant voltage (The MCP73832 is available in 4.20V, 4.35V, 4.40V, or 4.50V fixed voltage rating to accommodate emerging battery charging requirements).
- TC110 Boost Converter Demo Board operates directly from single cell AA battery or DC power source for evaluations.
- Ready to use design or simple modification to support various new portable applications.