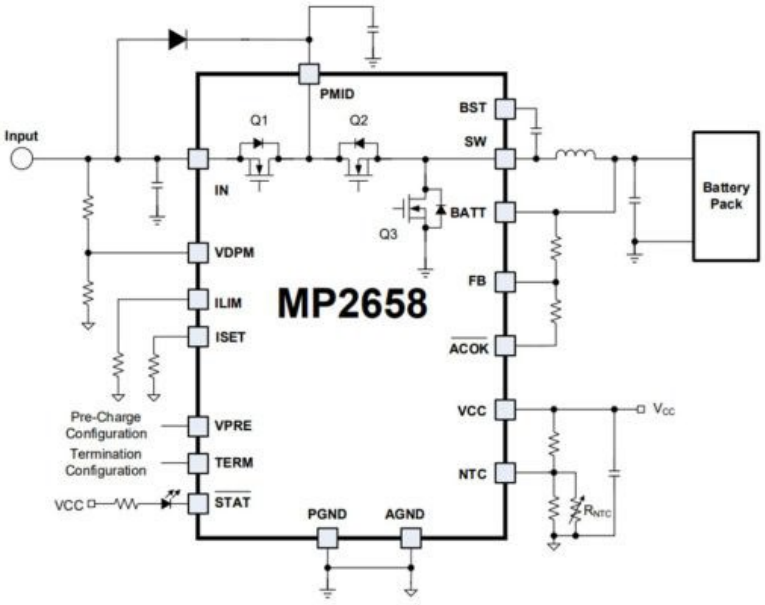
36V, Standalone Switching Charger with Integrated MOSFETs for Multi-Cell Series Battery Pack

The MP2658 is a highly integrated switching charger designed for portable devices with different battery chemistries. The MP2658 supports up to 7-cell series Li-ion, Li-polymer, and $LiFePO_4$ battery packs. It also supports lead-acid, super capacitor, NiMH, and NiCd battery packs from 2V to 31V. The device achieves up to 3A of charge current (I_{CC}) with any battery regulation voltage (V_{BATT_REG}).

The MP2658 operates under a maximum 36V DC input voltage and hold-off voltage up to 45V. When an input power supply is present, the MP2658 charges the battery with four phases: trickle charge, pre-charge, constant current (CC) charge, and constant voltage (CV) charge.



The MP2658 can be configured to different pre-charge to fast charge thresholds and different charge termination modes via the external pins. This allows the device to support super capacitor charging, as well as charging for different battery chemistries.

Power management is based on the input current (I_{IN}) and input voltage (V_{IN}). If I_{IN} exceeds the preset I_{IN} limit, or if V_{IN} drops to the preset V_{IN} limit, the MP2658 automatically decreases the charge current to protect the input power supply from an overload.

To guarantee safe operation, the MP2658 offers robust protection features such as battery over-voltage protection (OVP), battery temperature sensing and protection, thermal shutdown, and a charging safety timer.

The MP2658 is available in a QFN-19 (3mmx3mm) package.

Features & Benefits

- Up to 36V Operating Input Voltage (V_{IN})
- 45V Max Sustainable Voltage When Not Switching
- Up to 3A of Charge Current (I_{CC})
- Supports Any Battery Regulation Voltage (V_{BATT_REG}) from 2V to 31V
- 0.5% V_{BATT_REG} Accuracy
- Integrated Input Current (I_{IN}) Sensing and Reverse Blocking FET
- Internal Loop Compensation
- I_{IN} Limit Regulation
- Minimum V_{IN} Regulation
- Charge Operation Indicator
- Dead Battery Pack Recovery
- Battery Over-Voltage Protection (OVP)
- Charge Safety Timer
- Battery Negative Temperature Coefficient (NTC) Thermal Monitor
- Available in a QFN-19 (3mmx3mm) Package