

Hybrid Super Capacitor Power Manager for Backup Power Applications

DESCRIPTION

The MT2603NDHR is a complete solution for systems with backup storage capacitor or capacitor bank. It integrated input over voltage, over current protection circuit, a reverse blocking switch and hybrid super capacitor charging control circuit.

When the main supply is present and above the minimum system supply voltage, the system will draw power from input supply. At the same time, integrated linear charger charges the storage element at up to 750mA current. When the main supply is removed, the integrated reverse blocking switch will block current flow from system rail to input. The Linear charger will be turned on to provide power to system rail with low resistance path with up to 4A current. The circuit draws only 2.5μA of current from VCAP while it maintains the hybrid super capacitor or other storage element in its discharge state.

With programmable capacitor charge and discharge termination voltage, MT2603NDHR can safely manage the charging and discharging of hybrid type super capacitor.

The MT2603NDHR is externally programmable for input current limit, charge current limit, charge voltage limit. It provides a flag signal when input supply is unplugged so that main system can take action. MT2603NDHR is available in DFN3X3_12L package.

FEATURES

- 3.3V to 5.5V System Voltage
- 18V Input Rating with Over-Voltage Protection
- Programmable 1.8V to 3.8V Cap Voltage Range
- Programmable Super Cap Charge Current
- Programmable Input Over Current Protection
- Automatic Main/Backup Switchover
- Up to 4A Discharge Current
- Programmable Voltage and Current Thresholds
- ±2% CFBH & CFBL Threshold Accuracy
- 2.5μA Ready Quiescent Current
- Small Solution Size
- DFN3X3_12L Package

APPLICATIONS

- Portable Devices with Battery-free designs
- Handheld Industrial Equipment
- SSD / NAND data flush
- Industrial control systems
- Smart pens / RFID / E-Locks
- Medical device
- Dashboard Camera

TYPICAL APPLICATIONS

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