



MCP1640_B_C_D Start-up Synchronous Boost Regulator

General Description:

The MCP1640/40B/40C/40D is a compact, high-efficiency, fixed frequency, synchronous step-up DC-DC converter. It provides an easy-to-use power supply solution for applications powered by either one-cell, two-cell, or three-cell alkaline, NiCd, NiMH, one-cell Li-Ion or Li-Polymer batteries. The MCP1640/40B/40C/40D provides very high efficiency through integration of the low resistance N-Channel Boost switch and synchronous P-Channel switch.

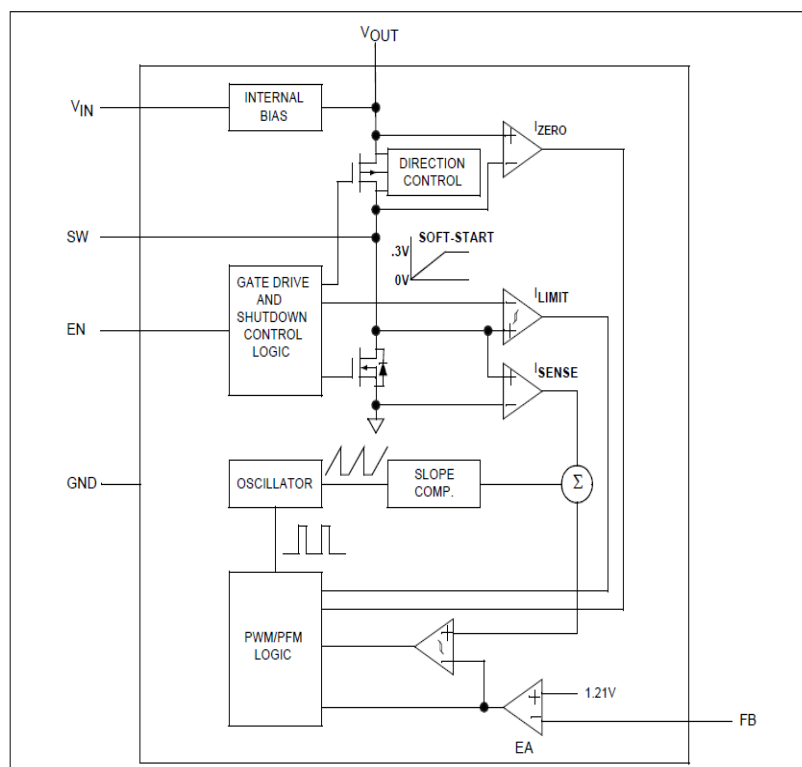
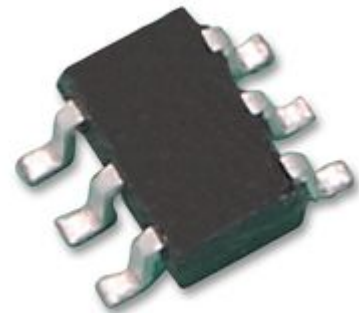


FIGURE 4-1: MCP1640/B/C/D Block Diagram.

Key Features:

- Up to 96% Typical Efficiency
- 800 mA Typical Peak Input Current Limit:

- IOUT > 100 mA @ 1.2V VIN, 3.3VOUT
- IOUT > 350 mA @ 2.4V VIN, 3.3 VOUT
- IOUT > 350 mA @ 3.3V VIN, 5.0VOUT
- Low Start-up Voltage: 0.65V
- Low Operating Input Voltage: 0.35V
- Adjustable Output Voltage Range: 2.0V to 5.5V
- Maximum Input Voltage < VOUT < 5.5V
- Automatic PFM/PWM Operation: PWM Operation at 500 kHz
- Low Device Quiescent Current: 19 μ A, typical PFM Mode
- Internal Synchronous Rectifier
- Internal Compensation
- Inrush Current Limiting and Internal Soft-Start
- True Load Disconnect Shutdown
- Shutdown Current (All States): < 1 μ A
- Low Noise, Anti-Ringing Control
- Overtemperature Protection
- SOT23-6 or 2x3 8-Lead DFN packages

Applications:

- One, Two and Three Cell Alkaline and NiMH/NiCd Portable Products
- Single Cell Li-Ion to 5V Converters
- Li Coin Cell Powered Devices
- Personal Medical Products
- Wireless Sensors
- Handheld Instruments
- GPS Receivers
- Bluetooth Headsets
- +3.3V to +5.0V Distributed Power Supply

Related Products Information:

Mfr Part #	Farnell #	Newark #	Description
MCP1640T-I/CHY	1800205	73R3628	Tape and Reel, 0.65V, Sync Reg., 6LD SOT-23 pkg.
MCP1640BT-I/CHY	1800207	73R3625	Tape and Reel, 0.65V, Sync Reg., 6LD SOT-23 pkg.
MCP1640CT-I/CHY	1800208	73R3626	Tape and Reel, 0.65V, Sync Reg., 6LD SOT-23 pkg.
MCP1640DT-I/CHY	1800209	73R3627	Tape and Reel, 0.65V, Sync Reg., 6LD SOT-23 pkg.