

The World's First Battery System Supervisor

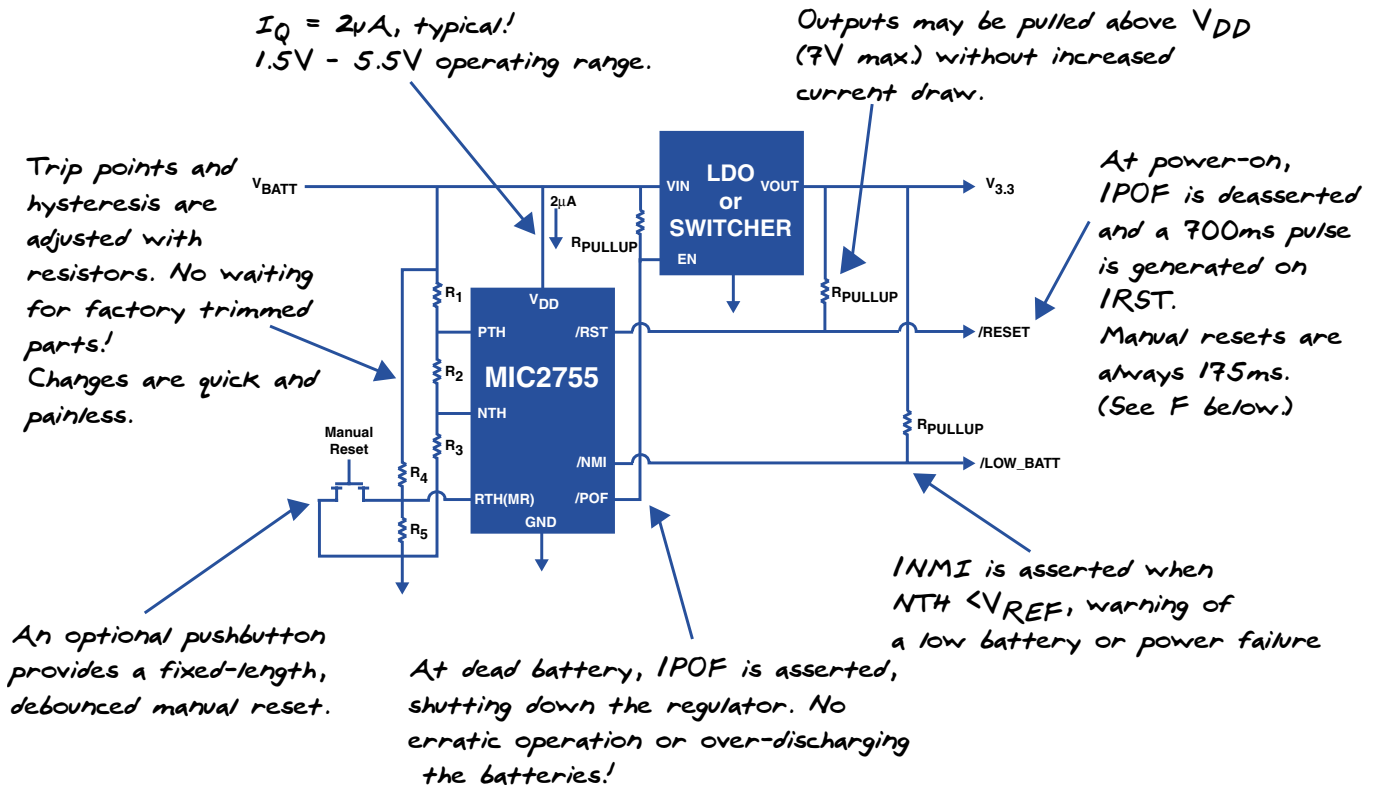
The MIC2755 is an 8-pin system management IC for battery operated portable systems. It detects and reports up to three battery states, provides power-on reset and manual reset capability, and controls the system's power regulator to ensure clean system shutdown and restart. With a 1.5V–5.5V operating range, it is equally well-suited for use with alkalines, NiMH/NiCd, 1-cell Li-Ion, LiMgO₂ coin cells, etc.

Additional features include ultra-low (5pA) input bias currents and adjustable hysteresis on the primary voltage monitor. Any I/O can be pulled above V_{DD} without adverse effects, simplifying design in systems with boost, buck, linear, or no regulator at all. The voltage thresholds are programmable and are accurate to $\pm 2\%$. Supply current is only 2 μ A typical. A typical application in a single-cell Li-Ion-powered handheld device is shown below.

Features

- ◆ Optimized for Portable Applications
- ◆ Separate Trip points for Adjustable Hysteresis
- ◆ Internal Reset/Delay Generator
- ◆ Debounced Manual Reset
- ◆ Separate V_{DD} Input
- ◆ Active-Low, Open-Drain Outputs
- ◆ Inputs and Output Can Be Pulled Above V_{DD}
- ◆ Ultra-Low Supply Current, 2 μ A Typical
- ◆ 1.5V – 5.5V Operating Range
- ◆ 8-pin MSOP Package

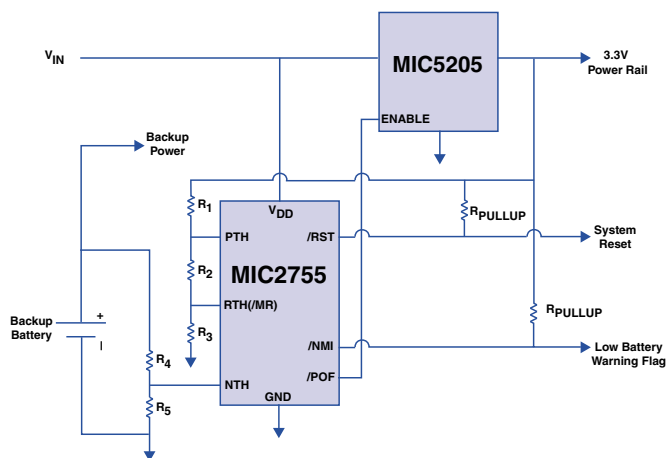
Typical 1-Cell Li-Ion-Powered Handheld Device



The MIC2755 is Extremely Versatile! Some Other Possible Configurations Are...

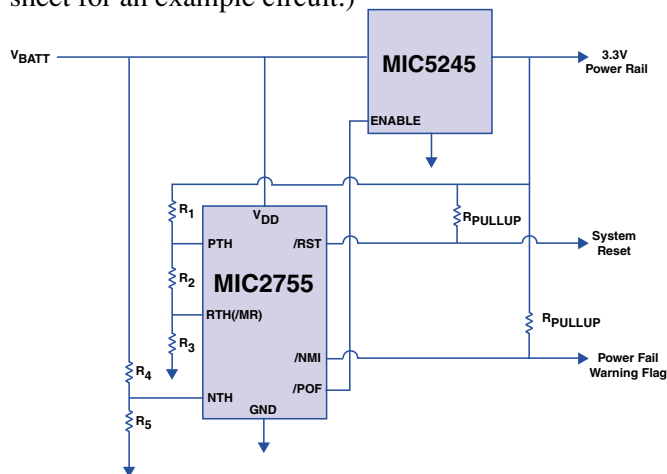
Voltage Supervisor and Backup Battery Monitor

R1, R2 and R3 configure the primary voltage monitor as a conventional 3.3V power supply supervisor. The NMI comparator monitors a backup battery such as a LiMgO2 "coin cell." /NMI will be asserted when the backup battery voltage falls below the threshold set by R4 and R5. Manual reset can be added as shown above. (See the MIC2755 data sheet for an example circuit.)



Voltage Supervisor And Power Fail Detector

R1, R2 and R3 configure the primary voltage monitor as a conventional 3.3V power supply supervisor. The NMI comparator monitors the input to the LDO regulator. /NMI will be asserted when input voltage falls below the threshold set by R4 and R5. By monitoring the input to the LDO, the system receives the earliest warning of an impending power loss such as a dead battery or AC power outage. Manual reset can be added as shown above. (See the MIC2755 data sheet for an example circuit.)



The MIC2755 is part of a growing family of voltage supervision products.

Part Number	Description	Adjustable Hysteresis	% Accuracy	I _Q (μA)	Package
MIC833	Voltage monitor with adjustable hysteresis	Y	±1	1	SOT23-5
MIC834	Comparator with reference	N	±1	1	SOT23-5
MIC2755	Battery system supervisor	Y	±2	2	MSOP-8
MIC2778/9	Voltage supervisor with adj. hysteresis and POR delay	Y	±1	1	SOT23-5

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