MIC5396/7/8/9

Low-Power Dual 300mA LDO

Revision 1.1

General Description

The MIC5396/7/8/9 is an advanced dual LDO ideal for powering general purpose portable devices. The MIC5396/7/8/9 provides two high-performance, independent 300mA LDOs in a single package. This makes it possible to improve system efficiency by providing two independent supply inputs that can be optimized for each individual LDO. The MIC5396/7/8/9 also features a wide output voltage range down to 1.0V.

Its full feature set and low dropout voltage make it ideal for battery-powered applications. The MIC5396/7/8/9 offers 2% accuracy, low dropout voltage (160mV at 300mA), and low ground current (typically 42µA per LDO at full load). The MIC5396/7/8/9 can also be put into a zero off mode current state, drawing virtually no current when disabled.

When the MIC5397/9 is disabled an internal resistive load is automatically applied to the output to discharge the output capacitor. In addition, the MIC5398/9 offers an internal enable pull-down resistor to ensure that the output is disabled when the enable is in tri-state mode. These LDO's also offer fast transient response and high PSRR while consuming a minimum operating current. The family is available in a tiny 8-pin, 1.2mm x 1.6mm leadless Extra Thin DFN package.

Data sheets and support documentation can be found on Micrel's web site at www.micrel.com.

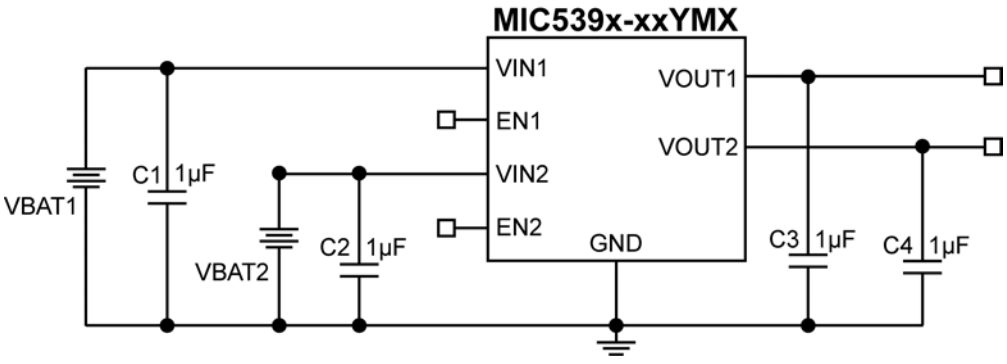
Features

- 2.5V to 5.5V input voltage range
- Independent power inputs
- Output voltage range from 1V to 3.3V
- Two 300mA outputs
- High output accuracy (±2%)
- Low quiescent current – 37µA typical/LDO
- Stable with 1µF ceramic output capacitors
- Low dropout voltage (160mV at 300mA)
- Independent enable pins
- Internal enable pull-down (MIC5398, MIC5399)
- Output discharge circuit (MIC5397, MIC5399)
- Thermal-shutdown protection
- Current-limit protection
- 8-pin 1.2mm x 1.6mm Extra Thin DFN package

Applications

- Smart phones
- DSC, GPS, PMP and PDAs
- Medical devices
- Portable electronics
- 5V systems

Typical Application



Absolute Maximum Ratings

Supply Voltage ($V_{IN1,}$ V_{IN2}) ..... –0.3V to +6V
Enable Voltage ($V_{EN1,}$ V_{EN2}). ..... –0.3V to V_{IN}
Power Dissipation (P_D) ..... Internally Limited
Lead Temperature (soldering, 10sec.) ..... 260°C
Junction Temperature (T_J) ..... –40°C to +125°C
Storage Temperature (T_s) ..... –65°C to +150°C
ESD Rating 3kV

Operating Ratings

Supply Voltage ($V_{IN1,}$ V_{IN2}) ..... +2.5V to 5.5V
Enable Voltage ($V_{EN1,}$ V_{EN2}). ..... 0V to V_{IN}
Junction Temperature (T_J) ..... –40°C to +125°C
Junction Thermal Resistance
1.2mm x 1.6mm Extra Thin DFN (θ_{JA}) ..... 172.6°C/W

Ordering Information

Part Number [1]	Marking Code	V_{OUT1}/V_{OUT2} [1]	EN Discharge Circuit	Output Discharge Circuit	Junction Temperature Range
MIC5396-GMYMX	RJ	1.8V/2.8V	—	–	–40°C to +125°C
MIC5397-GPYMX	RZ	1.8V/3.0V	–	X	–40°C to +125°C
MIC5398-P4YMX	RP	3.0V/1.2V	X	–	–40°C to +125°C
MIC5399-SSYMX	RD	3.3V/3.3V	X	X	–40°C to +125°C
MIC5399-SMYMX	1R	3.3V/2.8V	X	X	–40°C to +125°C
MIC5399-SGYMX	RM	3.3V/1.8V	X	X	–40°C to +125°C
MIC5399-MMYMX	2R	2.8V/2.8V	X	X	–40°C to +125°C
MIC5399-GPYMX[2]	3R	1.8V/3.0V	X	X	–40°C to +125°C
MIC5399-GMYMX	4R	1.8V/2.8V	X	X	–40°C to +125°C

Notes:

1. Other voltages are available. Contact Micrel for details.
2. Contact Micrel Marketing to order.

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