

## General Description

The MIC5392/3 is a tiny dual low-dropout linear regulator ideally suited for portable electronics. It is ideal for general purpose/digital applications which require high-power supply ripple rejection (PSRR) >60dB, eliminating the need for a bypass capacitor and providing two enable pins for maximum flexibility. The MIC5392/3 integrates two high-performance; 150mA LDOs into a tiny 6-pin, 1.2mm x 1.2mm leadless DFN package, which provides exceptional thermal package characteristics.

The MIC5392/3 is a  $\mu$ Cap design which enables operation with very small ceramic output capacitors for stability, thereby reducing required board space and component cost. The combination of low-drop-out voltage, high power supply rejection and exceptional thermal package characteristics makes it ideal for powering mobile phones camera modules, image sensors, PDAs, MP3 players and audio codec power applications.

The MIC5392/3 is available in fixed-output voltages in the tiny 6-pin 1.2mm x 1.2mm leadless DFN package which is only 1.44mm<sup>2</sup> in area. Additional voltage options are available.

Data sheets and support documentation can be found on Micrel's web site at: [www.micrel.com](http://www.micrel.com).

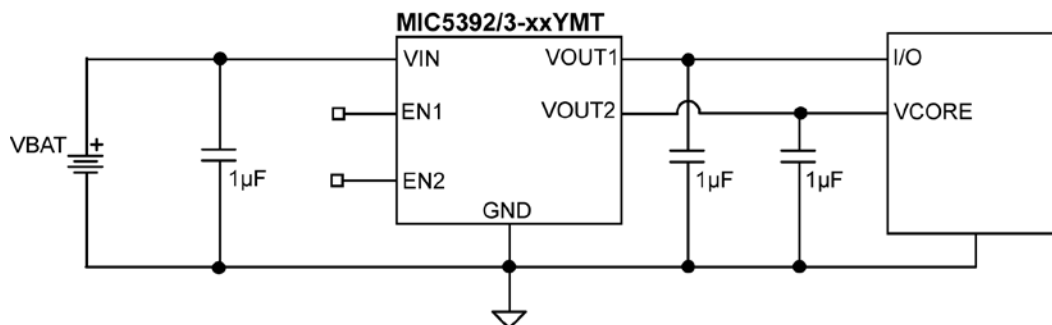
## Features

- 2.5V to 5.5V input voltage range
- Two 150mA output current LDOs
- High output accuracy
  - $\pm 2\%$  initial accuracy
- Low quiescent current (32 $\mu$ A per LDO)
- Stable with 1 $\mu$ F ceramic output capacitors
- Independent enable pins
- Low dropout voltage (155mV at 150mA)
- Thermal-shutdown protection
- Current-limit protection
- Internal 25 $\Omega$  output discharge circuit (MIC5393)
- 1.2mm x 1.2mm Extra Thin DFN package (H  $\leq$  0.4mm)
- 1.2mm x 1.2mm Thin DFN package

## Applications

- Smart phones
- Tablet PCs
- GPS, PMP, PDAs, and handhelds
- Audio codec power
- Portable electronics
- 5V systems

## Typical Application



Camera DSP Power Supply Circuit

**Absolute Maximum Ratings<sup>(1)</sup>**

Supply Voltage ( $V_{IN}$ )	-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	2kV

**Operating Ratings<sup>(2)</sup>**

Supply Voltage ( $V_{IN}$ )	+2.5V to 5.5V
Enable Voltage ( $V_{EN1}$ , $V_{EN2}$ )	-0.3V to $V_{IN}$
Junction Temperature ( $T_J$ )	-40°C to +125°C
Junction Thermal Resistance	
1.2mmx1.2mm Thin DFN-6 ( $\theta_{JA}$ )	173°C/W
1.2mmx1.2mm Extra Thin DFN-6 ( $\theta_{JA}$ )	173°C/W

**Ordering Information**

Part Number <sup>(1)</sup>	Manufacturing Part Number	Marking Code	Voltage	Junction Temperature Range
MIC5392-1.2/1.0YMT	MIC5392-4CYMT	RJ	1.2/1.0V	-40°C to +125°C
MIC5392-1.5/2.8YMX	MIC5392-FMYMX	RX	1.5/2.8V	-40°C to +125°C
MIC5392-2.8/1.5YMT	MIC5392-MFYMT	RP	2.8/1.5V	-40°C to +125°C
MIC5392-2.8/1.8YMT	MIC5392-MGYMT	RD	2.8/1.8V	-40°C to +125°C
MIC5392-3.0/1.8YMX	MIC5392-PGYMX	1R	3.0/1.8V	-40°C to +125°C
MIC5392-3.0/2.8YMT	MIC5392-PMYMT	RM	3.0/2.8V	-40°C to +125°C
MIC5392-3.0/2.8YMX	MIC5392-PMYMX	2R	3.0/2.8V	-40°C to +125°C
MIC5392-3.0/3.0YMX	MIC5392-PPYMX	3R	3.0/3.0V	-40°C to +125°C
MIC5392-3.3/1.8YMX	MIC5392-SGYMX	4R	3.3/1.8V	-40°C to +125°C
MIC5392-3.3/3.3YMT	MIC5392-SSYMT	RL	3.3/3.3V	-40°C to +125°C
MIC5392-3.3/3.3YMX	MIC5392-SSYMX	5R	3.3/3.3V	-40°C to +125°C
MIC5393-1.5/2.8YMX <sup>(2)</sup>	MIC5393-FMYMX	U6	1.5/2.8V	-40°C to +125°C
MIC5393-2.8/2.8YMX <sup>(2)</sup>	MIC5393-MMYMX	UV	2.8/2.8	-40°C to +125°C
MIC5393-3.0/1.8YMX <sup>(2)</sup>	MIC5393-PGYMX	U5	3.0/1.8V	-40°C to +125°C
MIC5393-3.0/2.8YMX <sup>(2)</sup>	MIC5393-PMYMX	UU	3.0/2.8V	-40°C to +125°C
MIC5393-3.0/3.0YMT <sup>(2)</sup>	MIC5393-PPYMT	UL	3.0/3.0V	-40°C to +125°C
MIC5393-3.0/3.0YMX <sup>(2)</sup>	MIC5393-PPYMX	U3	3.0/3.0V	-40°C to +125°C
MIC5393-3.3/1.8YMT <sup>(2)</sup>	MIC5393-SGYMT	UB	3.3/1.8V	-40°C to +125°C
MIC5393-3.3/1.8YMX <sup>(2)</sup>	MIC5393-SGYMX	U2	3.3/1.8V	-40°C to +125°C
MIC5393-3.3/3.3YMT <sup>(2)</sup>	MIC5393-SSYMT	UR	3.3/3.3V	-40°C to +125°C
MIC5393-3.3/3.3YMX <sup>(2)</sup>	MIC5393-SSYMX	U4	3.3/3.3V	-40°C to +125°C
MIC5393-3.3/3.3YMT <sup>(2)</sup>	MIC5393-SSYMT	UR	3.3/3.3V	-40°C to +125°C
MIC5393-3.3/3.3YMX <sup>(2)</sup>	MIC5393-SSYMX	U4	3.3/3.3V	-40°C to +125°C

**Notes:**

- Other voltages are available. Contact Micrel for details.
- MIC5393 offers Auto-Discharge function.

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