



## MIC5501/2/3/4

### Single 300mA LDO

Revision 2.0

#### General Description

The MIC5501/2/3/4 is an advanced general-purpose LDO ideal for powering general-purpose portable devices. The MIC5501/2/3/4 family of products provides a high-performance 300mA LDO in an ultra-small 1mm x 1mm package. The MIC5502 and MIC5504 LDOs include an auto-discharge feature on the output that is activated when the enable pin is low. The MIC5503 and MIC5504 have an internal pull-down resistor on the enable pin that disables the output when the enable pin is left floating. This is ideal for applications where the control signal is floating during processor boot up.

Ideal for battery-powered applications, the MIC5501/2/3/4 offers 2% initial accuracy, low dropout voltage (160mV at 300mA), and low ground current (typically 38 $\mu$ A). The MIC5501/2/3/4 can also be put into a zero-off-mode current state, drawing virtually no current when disabled.

The MIC5501/2/3/4 has an operating junction temperature range of  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ .

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

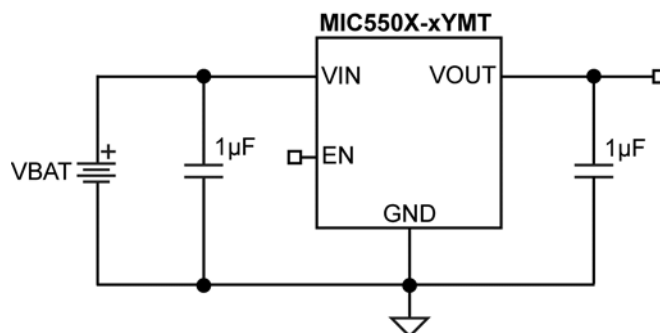
#### Features

- Input voltage range: 2.5V to 5.5V
- Fixed output voltages from 1.0V to 3.3V
- 300mA guaranteed output current
- High output accuracy ( $\pm 2\%$ )
- Low quiescent current: 38 $\mu$ A
- Stable with 1 $\mu$ F ceramic output capacitors
- Low dropout voltage: 160mV @ 300mA
- Output discharge circuit: MIC5502, MIC5504
- Internal enable pull-down: MIC5503, MIC5504
- Thermal-shutdown and current-limit protection
- 4-lead 1.0mm x 1.0mm Thin DFN package

#### Applications

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

#### Typical Application



## Absolute Maximum Ratings

Supply Voltage ( $V_{IN}$ )	-0.3V to 6V
Enable Voltage ( $V_{EN}$ )	-0.3V to $V_{IN}$
Power Dissipation ( $P_D$ )	Internally Limited
Lead Temperature (soldering, 10sec)	260°C
Junction Temperature ( $T_J$ )	-40°C to +150°C
Storage Temperature ( $T_S$ )	-65°C to +150°C
ESD Rating	3kV

## Operating Ratings

Supply Voltage ( $V_{IN}$ )	2.5V to 5.5V
Enable Voltage ( $V_{EN}$ )	0V to $V_{IN}$
Junction Temperature ( $T_J$ )	-40°C to +125°C
Junction Thermal Resistance	
1x1 Thin DFN-4 ( $\theta_{JA}$ )	250°C/W

## Ordering Information

Part Number	Marking Code	Output Voltage <sup>(1)</sup>	Auto-Discharge	EN Pull-Down	Temperature Range
MIC5501-3.3YMT <sup>(2)</sup>	VS	3.3V	NO	NO	-40°C to +125°C
MIC5501-3.0YMT	VP	3.0V	NO	NO	-40°C to +125°C
MIC5501-2.8YMT <sup>(2)</sup>	VM	2.8V	NO	NO	-40°C to +125°C
MIC5501-1.8YMT <sup>(2)</sup>	VG	1.8V	NO	NO	-40°C to +125°C
MIC5501-1.2YMT <sup>(2)</sup>	V4	1.2V	NO	NO	-40°C to +125°C
MIC5502-3.3YMT <sup>(2)</sup>	XS	3.3V	YES	NO	-40°C to +125°C
MIC5502-3.0YMT <sup>(2)</sup>	XP	3.0V	YES	NO	-40°C to +125°C
MIC5502-2.8YMT	XM	2.8V	YES	NO	-40°C to +125°C
MIC5502-1.8YMT <sup>(2)</sup>	XG	1.8V	YES	NO	-40°C to +125°C
MIC5502-1.2YMT <sup>(2)</sup>	X4	1.2V	YES	NO	-40°C to +125°C
MIC5503-3.3YMT <sup>(2)</sup>	SV	3.3V	NO	YES	-40°C to +125°C
MIC5503-3.0YMT <sup>(2)</sup>	ZV	3.0V	NO	YES	-40°C to +125°C
MIC5503-2.8YMT <sup>(2)</sup>	MV	2.8V	NO	YES	-40°C to +125°C
MIC5503-1.8YMT	YV	1.8V	NO	YES	-40°C to +125°C
MIC5503-1.2YMT <sup>(2)</sup>	XV	1.2V	NO	YES	-40°C to +125°C
MIC5504-3.3YMT	SX	3.3V	YES	YES	-40°C to +125°C
MIC5504-3.1YMT	TX	3.1V	YES	YES	-40°C to +125°C
MIC5504-3.0YMT	PX	3.0V	YES	YES	-40°C to +125°C
MIC5504-2.8YMT	MX	2.8V	YES	YES	-40°C to +125°C
MIC5504-1.8YMT	GX	1.8V	YES	YES	-40°C to +125°C
MIC5504-1.2YMT	ZX	1.2V	YES	YES	-40°C to +125°C

### Notes:

- Other voltages are available. Contact Micrel for details.
- Contact Micrel Marketing for availability.

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