

Low Voltage, High Current LDOs Solutions for Powering 2.5V and 1.8V Digital ICs

Smaller process geometry is enabling today's DSPs, μ Controllers and Field Programmable Logic devices to operate at high current and low voltages (2.5V and 1.8V). Micrel's MIC39xxx and MIC5156 low dropout power supply solutions are designed to support these low-voltage digital ICs.

The MIC39xxx family of low voltage, high current LDOs offers the simplest solution for generating 2.5V from the legacy 3.3V or 1.8V from 2.5V. All that is needed is an output capacitor!

With only 500mV of dropout under worst case conditions, the MIC39xxx family of LDOs come in four current levels (1.0A, 1.5A, 3.0A and 5.0A) and five package options.

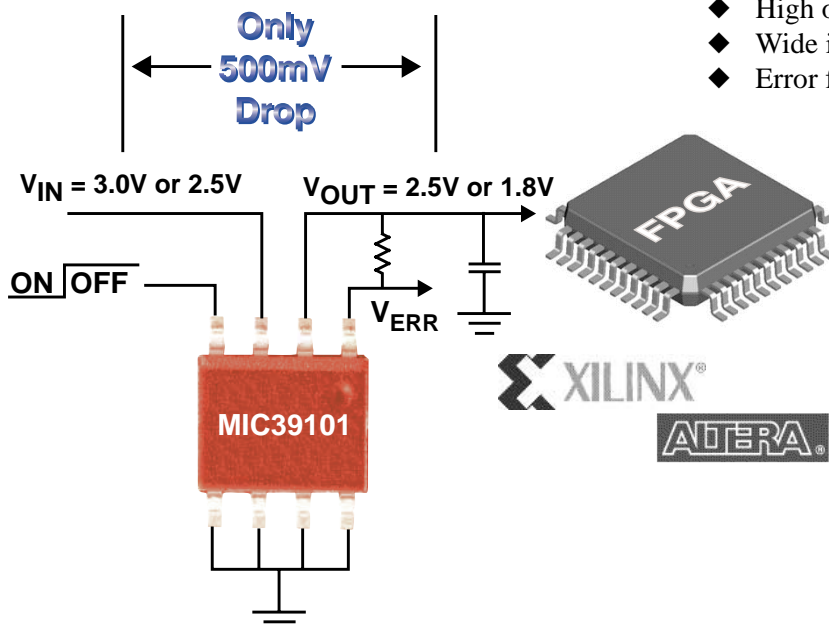
For applications requiring greater than 5.0A, Micrel offers the MIC5156 Super LDO™ Controller. When used with an external N-channel power MOSFET and a bias supply greater than the input, the MIC5156 controller forms an LDO solution with ultra low dropout ($I_{OUT} \times R_{DS(ON)}$). An adjustable version of the MIC5156 is capable of supplying an output voltage down to 1.3V.

MIC39xxx LDO Features

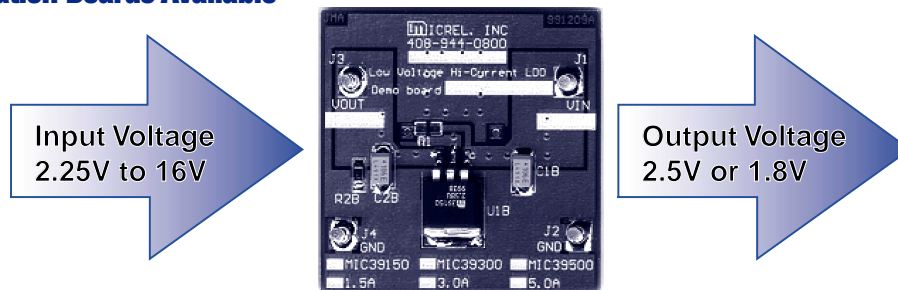
- ◆ Available in 4 current levels
 - 1.0A – MIC3910x
 - 1.5A – MIC3915x
 - 3.0A – MIC3930x
 - 5.0A – MIC3950x
- ◆ Very low dropout voltage: 500mV over temp
 - Perfect for 3.0V to 2.5V conversion
 - Perfect for 2.5V to 1.8V conversion
- ◆ High output accuracy: $\pm 1.0\%$
- ◆ Wide input range: 2.25V to 16V
- ◆ Error flag and enable options
- ◆ Reverse battery and reverse leakage protection
- ◆ Current limit and thermal shutdown protection
- ◆ Fixed output voltages: 2.5V and 1.8V
- ◆ SO-8, SOT-223, TO-263, & TO-220 packages

MIC5156 Super LDO™ Controller Features

- ◆ User-selectable output current
- ◆ Ultra-low dropout voltage ($I_{OUT} \times R_{DS(ON)}$)
 - Perfect for 3.0V to 2.5V conversion
 - Perfect for 2.5V to 1.8V conversion
- ◆ High output accuracy: $\pm 1.0\%$
- ◆ Wide input range: up to 36V
- ◆ Error flag and enable option
 - ◆ Thermal shutdown and optional current limit protection
 - ◆ Adjustable voltage down to 1.3V
 - ◆ SO-8 package



MIC39xxx Evaluation Boards Available



Ordering Information

MIC39100-2.5BS	Fixed 2.5V Output 1A LDO in SOT-223 Package
MIC29100-1.8BS	Fixed 1.8V Output 1A LDO in SOT-223 Package
MIC39101-2.5BM	Fixed 2.5V Output 1A LDO in Power SO-8 Package (includes Enable & Error Flag Pins)
MIC39101-1.8BM	Fixed 1.8V Output 1A LDO in Power SO-8 Package (includes Enable & Error Flag Pins)
MIC39102BM	Adjustable Output 1A LDO in SO-8 Package (includes Enable Pin)
MIC39150-2.5BU	Fixed 2.5V Output 1.5A LDO in TO-263-3 Package
MIC39150-2.5BT	Fixed 2.5V Output 1.5A LDO in TO-220-3 Package
MIC39150-1.8BU	Fixed 1.8V Output 1.5A LDO in TO-263-3 Package
MIC39150-1.8BT	Fixed 1.8V Output 1.5A LDO in TO-220-3 Package
MIC39151-2.5BU	Fixed 2.5V Output 1.5A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39151-2.5BT	Fixed 2.5V Output 1.5A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC39151-1.8BU	Fixed 1.8V Output 1.5A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39151-1.8BT	Fixed 1.8V Output 1.5A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC39300-2.5BU	Fixed 2.5V Output 3.0A LDO in TO-263-3 Package
MIC39300-2.5BT	Fixed 2.5V Output 3.0A LDO in TO-220-3 Package
MIC39300-1.8BU	Fixed 1.8V Output 3.0A LDO in TO-263-3 Package
MIC39300-1.8BT	Fixed 1.8V Output 3.0A LDO in TO-220-3 Package
MIC39301-2.5BU	Fixed 2.5V Output 3.0A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39301-2.5BT	Fixed 2.5V Output 3.0A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC39301-1.8BU	Fixed 1.8V Output 3.0A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39301-1.8BT	Fixed 1.8V Output 3.0A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC39500-2.5BU	Fixed 2.5V Output 5.0A LDO in TO-263-3 Package
MIC39500-2.5BT	Fixed 2.5V Output 5.0A LDO in TO-220-3 Package
MIC39500-1.8BU	Fixed 1.8V Output 5.0A LDO in TO-263-3 Package
MIC39500-1.8BT	Fixed 1.8V Output 5.0A LDO in TO-220-3 Package
MIC39501-2.5BU	Fixed 2.5V Output 5.0A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39501-2.5BT	Fixed 2.5V Output 5.0A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC39501-1.8BU	Fixed 1.8V Output 5.0A LDO in TO-263-5 Package (includes Enable & Error Flag Pins)
MIC39501-1.8BT	Fixed 1.8V Output 5.0A LDO in TO-220-5 Package (includes Enable & Error Flag Pins)
MIC5156BM	Adjustable Output Super LDO™ Regulator Controller

Contact Micrel Semiconductor

Corporate HQ, USA

1849 Fortune Drive
San Jose,
CA 95131 USA
Tel: +1 (408) 944-0800
Fax: +1-408-944-0970

Micrel Eastern USA

93 Branch Street
Medford, NJ 08055 USA
Tel: +1 (609) 654-0078
Fax: +1 (609) 546-0989

Micrel Central USA

8402 Sterling Suite 101
Irving, TX 75063 USA
Tel: +1 (972) 929-0051
Fax: +1 (972) 915-0120

Micrel Western USA

3250 Scott Blvd.
Santa Clara, CA 95054 USA
Tel: +1 (408) 914-7670
Fax: +1 (408) 914-7878

Micrel Northwest USA

401 NE Ravenna Blvd. Box 152
Seattle, WA 98115 USA
Tel: +1 (206) 526-7299
Fax: +1 (206) 526-8829

Micrel Southwest USA

7545 Irvine Center Dr. Suite 200
Irvine, CA 92618 USA
Tel: +1 (949) 623-8433
Fax: +1 (949) 623-8305

Micrel Semiconductor Asia

4F, Jinsol Building
826-14, Yeoksam-dong
Kangnam-ku
Seoul 135-080 Korea
Tel: +82 (2) 3466-3000
Fax: +82 (2) 3466-2999

Micrel Semiconductor Taiwan

12F-10, No. 237
Sec. 2, Fu-Hsing South Road
Taipei, Taiwan, R.O.C.
Tel: +886 92) 2705-4976
Fax: +886 (2) 2705-4977

Micrel Semiconductor Japan

1-16-15 Dogenzaka, Shibuyaku
Tokyo 150-0043 Japan
Tel: +81 (3) 5428-0871
Fax: +81 (3) 5428-0872

Micrel Semiconductor Europe

1st Floor, 3 Lockside Place
Mill Lane
Newbury, Berks RG14 5QS
United Kingdom
Tel: +44 1635-524455
Fax: +44 1635 524466

Worldwide Web

<http://www.micrel.com>

Literature Requests

USA +1(800) 401-9572

MICREL
The Infinite Bandwidth Company™