LMZ20502 2A SIMPLE SWITCHER ® Nano Module

Check for Samples: LMZ20502

FEATURES

- **Integrated inductor**
- **Miniature 3.5mm x 3.5mm x 1.9mm package**
- **-40°C to 125°C junction temperature range**
- **Power good flag function**
- **Pin selectable switching modes**
- **Adjustable output voltage**
- **3.0MHz Fixed PWM Switching Frequency**
- **Internal compensation and soft-start**
- **Current limit, thermal shutdown, and UVLO protection**
- **Requires only 5 external components**

ELECTRICAL SPECIFICATIONS

- **2A maximum load current**
- **Input voltage range 2.7V to 5.5V**
- **Output voltage range 0.8V to 3.6V**
- **± 1% feedback tolerance over termperature**
- **1 µA (max) quiescent current in shutdown**
- **64 µA (typ) quiescent current**

PERFORMANCE BENEFITS

- **Small solution size**
- **Easy component selection and simple PCB layout**
- **High efficiency reduces system heat generation**

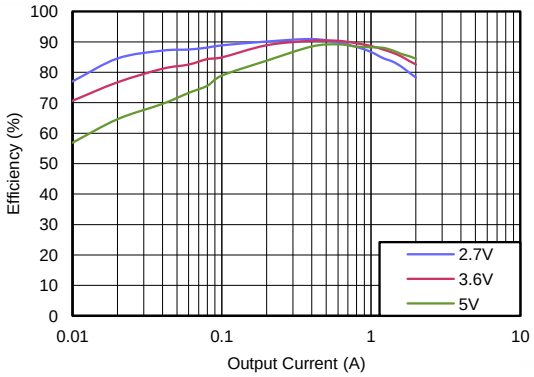

Figure 1. Typical Efficiency for Vout = 1.8V

DESCRIPTION

The LMZ20502 Simple Switcher ® Nano Module regulator is an easy to use synchronous step-down DC-DC converter capable of driving up to 2A of load from an input of up to 5.5V, with exceptional efficiency and output accuracy in a very small solution size. The innovative package contains the regulator and inductor in a small 3.5mm x 3.5mm x 1.9mm volume. Thus saving board space and eliminating the time and expense of inductor selection. The LMZ20502 requires few external components and has a pin out designed for simple, optimum PCB layout. The LMZ20502 is a member of Texas Instruments' SIMPLE SWITCHER ® family. The SIMPLE SWITCHER ® concept provides for an easy to use complete design using a minimum number of external components and the TI WEBENCH ® design tool. TI's WEBENCH ® tool includes features such as external component calculation, electrical simulation, thermal simulation, and Build-It boards for easy design-in.

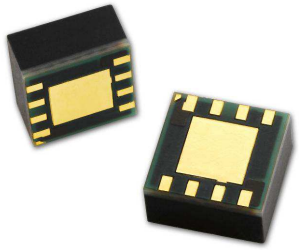

Figure 2. 8 Pin DFN 3.5mm x 3.5mm x 1.9mm 0.8mm Lead Pitch

PRODUCT PREVIEW

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Typical Applcation Circuit

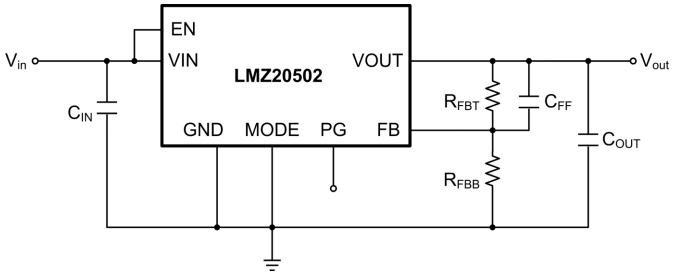
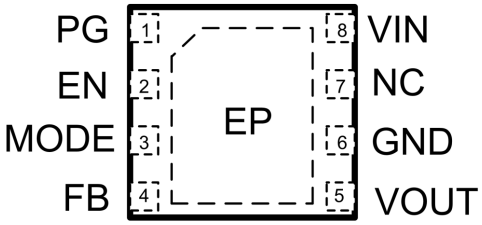


Figure 3. Typical Application Circuit

Connection Diagram



TOP VIEW

Figure 4. Connection Diagram

PIN DESCRIPTIONS

Pin #	NAME	TYPE(1)	Description
1	PG	O	Power good flag; open drain. Connect to logic supply through a resistor. High = power good; Low = power bad
2	EN	I	Enable input. High = ON, Low = off. Do not float
3	MODE	I	Mode selection input. HIgh = forced PWM. Low = auto mode selection between PFM and PWM. Do not float.
4	FB	I	Feedback input to controller. Connect to output through feedback divder.
5	VOUT	P	Regulated output voltage.
6	GND	G	Ground for all circuitry. reference point for all voltages.
7	NC		No Connect; leave floating
8	VIN	P	Input supply to regulator. Connect a bypass capacitor as close as possible to the VIN pin and GND pin of the module
EP	EP	G	Ground and heatsink connection.

(1) G = Ground, I = Input, O = Output, P = Power

These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

PRODUCT PREVIEW

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