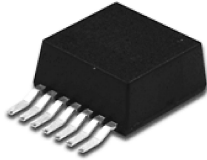
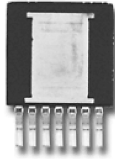


3A SIMPLE SWITCHER® Power Module with 5.5V Maximum Input Voltage

Easy to Use 7 Pin Package



Top View



Bottom View

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TO-PMOD 7 Pin Package
10.16 x 13.77 x 4.57 mm (0.4 x 0.39 x 0.18 in)
 $\theta_{JA} = 20^{\circ}\text{C/W}$, $\theta_{JC} = 1.9^{\circ}\text{C/W}$
RoHS Compliant

Electrical Specifications

- 15W maximum total output power
- Up to 3A output current
- Input voltage range 2.95V to 5.5V
- Output voltage range 0.8V to 5V
- $\pm 1.63\%$ feedback voltage accuracy over temperature
- Efficiency up to 96%

Key Features

- Integrated shielded inductor
- Flexible startup sequencing using external soft-start, tracking, and precision enable
- Protection against in-rush currents and faults such as input UVLO and output short-circuit
- -40°C to $+125^{\circ}\text{C}$ junction temperature operating range
- Single exposed pad and standard pinout for easy mounting and manufacturing
- Pin-to-pin compatible with LMZ10504 (4A/20W max) LMZ10505 (5A/25W max)
- Fully enable for WEBENCH® and Power Designer

Applications

- Point-of-load conversions from 3.3V and 5V rails
- Space constrained applications
- Extreme temperatures/no air flow environments
- Noise sensitive applications (i.e. transceiver, medical)

Note 1: θ_{JA} measured on a 2.25" x 2.25" (5.8 cm x 5.8 cm) four layer board.

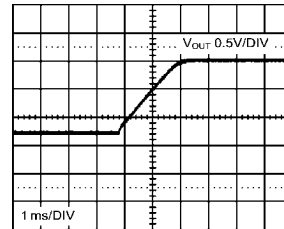
Note 2: EN 55022:2006, +A1:2007, FCC Part 15 Subpart B: 2007.

Performance Benefits

- Operates at high ambient temperatures
- High efficiency up to 96% reduces system heat generation
- Low radiated emissions (EMI) complies with EN55022 class B standard
- Passes 10V/m radiated immunity EMI test standard EN61000 4-3
- Low output voltage ripple of 10 mV allows for powering noise-sensitive transceiver and signaling ICs
- Fast transient response for powering FPGAs and ASICs

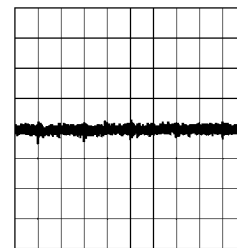
System Performance

Pre-biased Startup ($V_{OUT} = 2.5$), $I_{OUT} = 0\text{A}$



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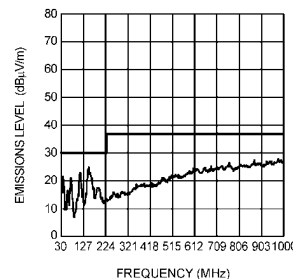
Output Voltage Ripple ($V_{OUT} = 2.5\text{V}$)



500 ns/DIV

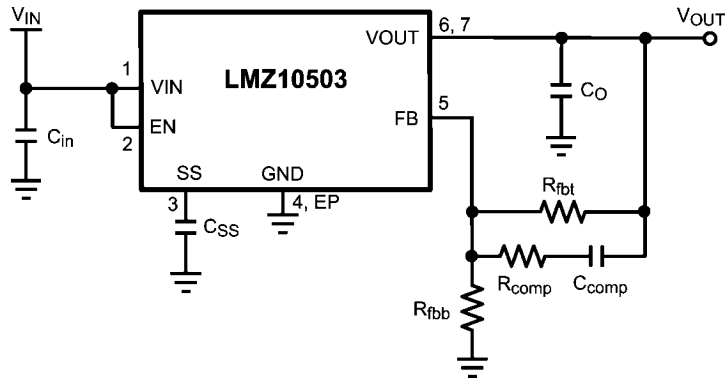
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Radiated Emissions (EN 55022, Class B) Evaluation Board



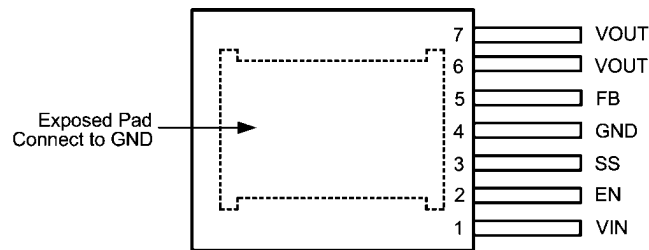
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Typical Application Circuit



30111801

Connection Diagram



Top View
7-Lead TO-PMOD

30111872

Ordering Information

Order Number	Supplied As	Package Type	NSC Package Drawing	Package Marking
LMZ10503TZ-ADJ	250 Units in Tape and Reel	TO-PMOD-7	TZA07A	LMZ10503TZ-ADJ
LMZ10503TZ-ADJ	500 Units in Tape and Reel			

Pin Descriptions

Pin Number	Name	Description
1	VIN	Power supply input. A low ESR input capacitance should be located as close as possible to the VIN pin and exposed pad (EP).
2	EN	Active high enable input for the device.
3	SS	Soft-start control pin. An internal 2 μ A current source charges an external capacitor connected between SS and GND pins to set the output voltage ramp rate during startup. The SS pin can also be used to configure the tracking feature.
4	GND	Power ground and signal ground. Provide a direct connection to the EP. Place the bottom feedback resistor as close as possible to GND and FB pin.
5	FB	Feedback pin. This is the inverting input of the error amplifier used for sensing the output voltage. Keep the copper area of this node small.
6, 7	VOUT	The output terminal of the internal inductor. Connect the output filter capacitor between VOUT pin and EP.
EP	Exposed Pad	Exposed pad is used as a thermal connection to remove heat from the device. Connect this pad to the PC board ground plane in order to reduce thermal resistance value. EP must also provide a direct electrical connection to the input and output capacitors ground terminals. Connect EP to pin 4.

Notes

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