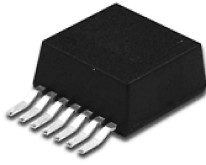
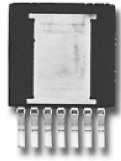


1A SIMPLE SWITCHER® Power Module with 20V Maximum Input Voltage

Easy to use 7 pin package



Top View



Bottom View

30114886

TO-PMOD 7 Pin Package
 10.16 x 13.77 x 4.57 mm (0.4 x 0.542 x 0.18 in)
 $\theta_{JA} = 20^{\circ}\text{C/W}$, $\theta_{JC} = 1.9^{\circ}\text{C/W}$
 RoHS Compliant

Applications

- Point of load conversions from 5V and 12V input rail
- Time critical projects
- Space constrained high thermal requirement applications
- Negative output voltage applications

Performance Benefits

- Operates at high ambient temperature with no thermal derating
- High efficiency 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

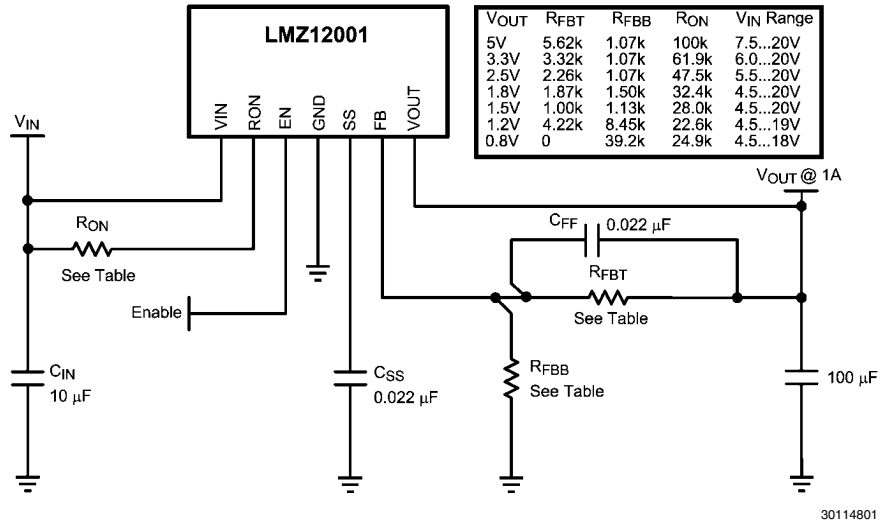
Electrical Specifications

- 18W maximum total power output
- Up to 1A output current
- Input voltage range 4.5V to 20V
- Output voltage range 0.8V to 6V
- Efficiency up to 92%

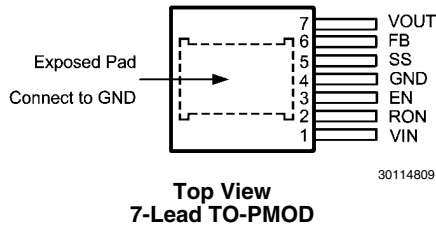
Key Features

- Integrated shielded inductor
- Simple PCB layout
- Flexible startup sequencing using external soft-start capacitor and precision enable
- Protection against inrush currents and faults such as input UVLO and output short circuit
- -40°C to 125°C junction temperature range
- Single exposed pad and standard pinout for easy mounting and manufacturing
- Fast transient response for FPGAs and ASICs
- Low output voltage ripple
- Pin-to-pin compatible family:
 LMZ14203/2/1 (42V max 3A, 2A, 1A)
 LMZ12001/2/1 (20V max 3A, 2A, 1A)
- Fully Webench® Power Designer enabled

Simplified Application Schematic



Connection Diagram



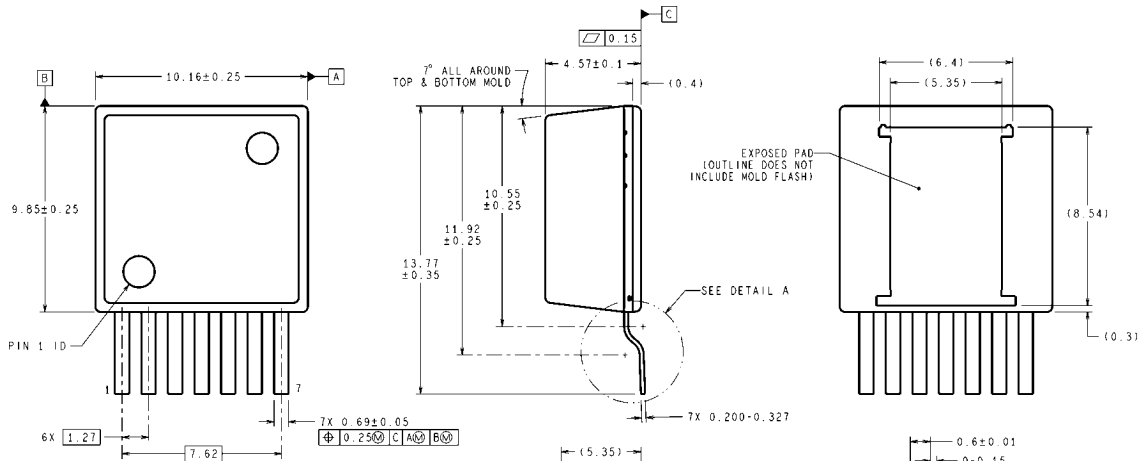
Ordering Information

Order Number	Package Type	NSC Package Drawing	Supplied As
LMZ12001 TZ-ADJ	TO-PMOD-7	TZA07A	250 Units on Tape and Reel
LMZ12001 TZX-ADJ	TO-PMOD-7	TZA07A	500 Units on Tape and Reel

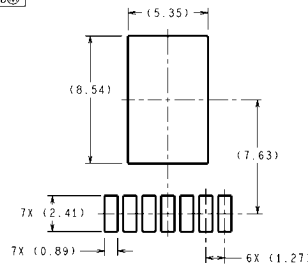
Pin Descriptions

Pin	Name	Description
1	VIN	Supply input — Nominal operating range is 4.5V to 20V . A small amount of internal capacitance is contained within the package assembly. Additional external input capacitance is required between this pin and exposed pad.
2	RON	On Time Resistor — An external resistor from V _{IN} to this pin sets the on-time of the application. Typical values range from 25k to 100k ohms.
3	EN	Enable — Input to the precision enable comparator. Rising threshold is 1.18V nominal; 90 mV hysteresis nominal. Maximum recommended input level is 6.5V.
4	GND	Ground — Reference point for all stated voltages. Must be externally connected to EP.
5	SS	Soft-Start — An internal 8 µA current source charges an external capacitor to produce the soft-start function. This node is discharged at 200 µA during disable, over-current, thermal shutdown and internal UVLO conditions.
6	FB	Feedback — Internally connected to the regulation, over-voltage, and short-circuit comparators. The regulation reference point is 0.8V at this input pin. Connected the feedback resistor divider between the output and ground to set the output voltage.
7	VOUT	Output Voltage — Output from the internal inductor. Connect the output capacitor between this pin and exposed pad.
EP	EP	Exposed Pad — Internally connected to pin 4. Used to dissipate heat from the package during operation. Must be electrically connected to pin 4 external to the package.

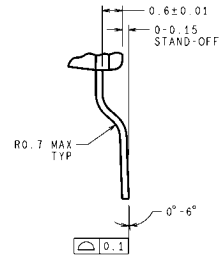
Physical Dimensions inches (millimeters) unless otherwise noted



DIMENSIONS ARE IN MILLIMETERS
DIMENSIONS IN () FOR REFERENCE ONLY



RECOMMENDED LAND PATTERN
7-Lead TZA Package
NS Package Number TZA07A



DETAIL A
TZA07A (Rev C)

Notes

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Switching Regulators	www.national.com/switchers	Distributors	www.national.com/contacts
LDOs	www.national.com/ldo	Quality and Reliability	www.national.com/quality
LED Lighting	www.national.com/led	Feedback/Support	www.national.com/feedback
Voltage References	www.national.com/vref	Design Made Easy	www.national.com/easy
PowerWise® Solutions	www.national.com/powerwise	Applications & Markets	www.national.com/solutions
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