EV20056-G-00A

Fast Transient Response, Ultra-Small 250mA Linear Regulator EV Board

The Future of Analog IC Technology ____

DESCRIPTION

The EV20056-G-00A evaluation board demonstrates the performance of MP20056-18, a low noise, low dropout and high PSRR linear regulator. It operates from a 2.5V to 5.5V input voltage and the output voltage is preset internally at 1.8V.

The EV20056-G-00A can supply up to 250mA of load current, and features current limiting, over temperature protection.

An internal PMOS pass element is used to allow a low 150µA ground current, making the MP20056-G suitable for battery-power devices.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	2.5 - 5.5	V
Output Voltage	V_{OUT}	1.8	V
Load Current	I _{OUT}	250	mA

FEATURES

- Up to 250mA Output Current
- Low 100mV Dropout at 250mA
- Fast Transient Response
- 70dB PSRR at 1kHz
- 13μV_{RMS} Low Noise Output
- Fixed output voltage 1.8V
- Current Limit and Thermal Protection

APPLICATIONS

- Telecom
- Cellular Phones
- DSP, FPGA Supplies
- Hand –Held Instruments
- Notebook Computers

All MPS parts are lead-free, halogen free, and adhere to the RoHS directive. For MPS green status, please visit MPS website under Quality Assurance

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EV20056-G-00A EVALUATION BOARD



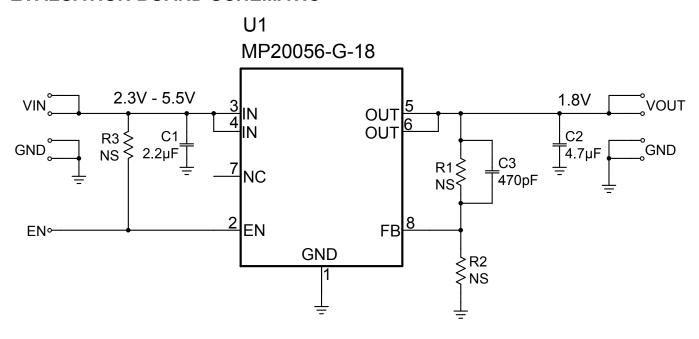
(L x W x H) 2.5" x 2.5" x 0.4" (6.35cm x 6.35cm x 1.1cm)

Board Number	MPS IC Number		
EV20056-G-00A	MP20056-G-1.8		

Note: MPQ20056 and MP20056 share the same EVB.



EVALUATION BOARD SCHEMATIC



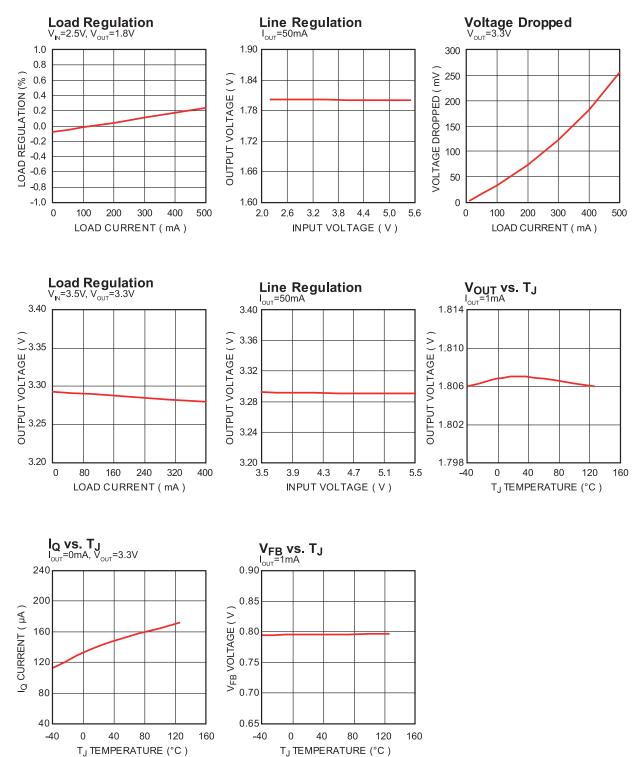
EV20056-G-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	2.2µF	Ceramic Cap., 6.3V, 10%, X5R	0603	muRata	GRM188R60J225KE19D
1	C2	4.7µF	Ceramic Cap., 6.3V, 10%, X5R	0603	muRata	GRM188R60J475KE19D
1	C3	470pF	CAP, 0603, 50V, X7R, 10%	0603	muRata	GRM188R71H471KA01D
	R1,R2,R3	NS		0603		
1	U1		Linear Regulator	QFN8(2X2mm)	MPS	MP20056GG-18-R5
4	VIN, VOUT, GND	Test Point	Test Point	2x2.54mm	HZ	China market
1	EN	Test Point	Test Point	Test Point	HZ	China market



EVB TEST RESULTS

Performance waveforms are tested on the evaluation board. $V_{IN} = 2.5V$, $V_{OUT} = 1.8V$, $T_A = 25$ °C, unless otherwise noted.

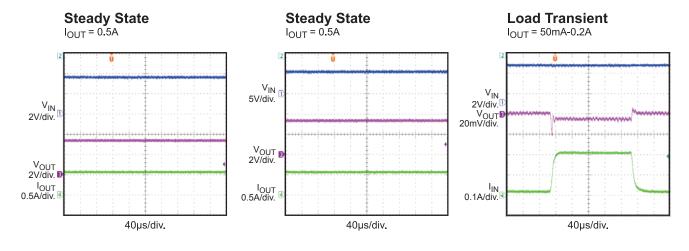


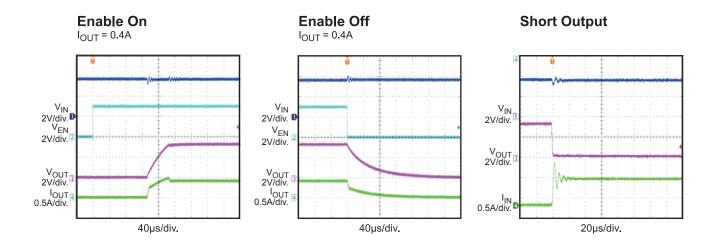
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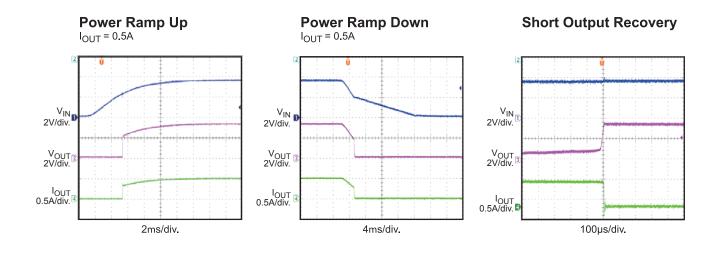


EVB TEST RESULTS (continued)

Performance waveforms are tested on the evaluation board. $V_{IN} = 2.5V$, $V_{OUT} = 1.8V$, $T_A = 25^{\circ}C$, unless otherwise noted.









PRINTED CIRCUIT BOARD LAYOUT

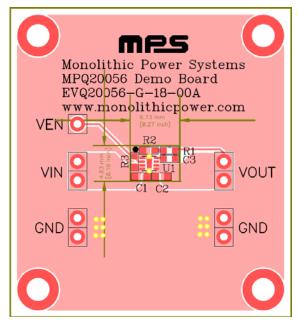


Figure 1—Top and Top Silk Layer

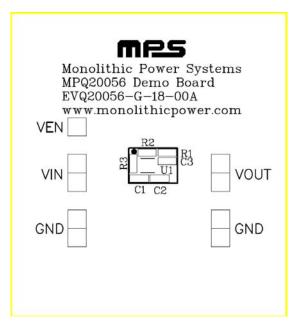


Figure 2—Top Silk Layer

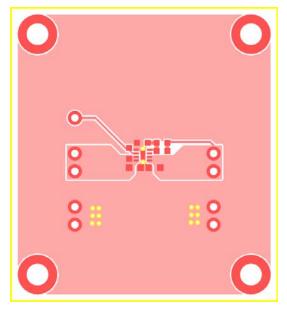


Figure 3—Top Layer



QUICK START GUIDE

- 1. Connect the positive terminal of the load to VOUT pins, and the negative terminal of the load to GND pins.
- 2. Preset the power supply output to 2.5V <VIN<5.5V and turn off the power supply.
- 3. Connect the positive terminal of the power supply output to the VIN pin and the negative terminal of the power supply output to the GND pin.
- 4. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 1.5V to turn on the regulator or less than 0.4V to turn it off.
- 5. Turn on the power supply. The EVQ20056-G will automatically start up.
- 6. The output voltage is fixed 1.8V.

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