



The Future of Analog IC Technology®

EV2360DG-00B

1.8A, 24V, 1.4MHz Step-Down Converter in 2mm x 2mm QFN8 Evaluation Board

DESCRIPTION

The EV2360DG-00B is the evaluation board for the MP2360, a monolithic non-synchronous step-down switch mode converter with an integrated power MOSFET.

The MP2360 achieves 1.8A continuous output current over a wide input supply range with excellent load and line regulation.

Current mode operation provides fast transient response and eases loop stabilization.

Fault condition protection includes cycle-by-cycle current limiting and thermal shutdown.

The MP2360 is available in a 2mm x 2mm QFN8 package.

FEATURES

- 2.5A Peak Output Current
- 1.8A Continuous Output Current
- Wide 4.5V to 24V Operating Input Range
- Output Adjustable from 0.8V to 15V
- Ultra Compact 2mmx2mm QFN8 Package
- Fully Assembled and Tested

APPLICATIONS

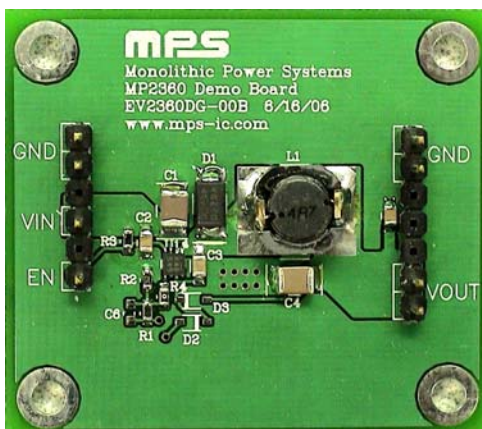
- Broadband Communications Equipment
- Digital Entertainment Systems
- Distributed Power Systems
- Battery Chargers
- Pre-Regulator for Linear Regulators

*MPS® and "The Future of Analog IC Technology", are Trademarks of Monolithic Power Systems, Inc.

ELECTRICAL SPECIFICATIONS

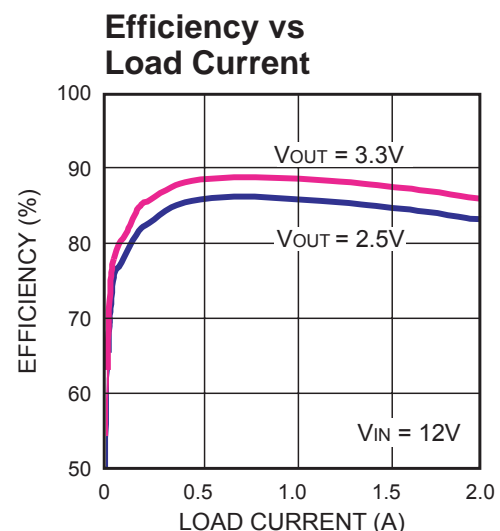
Parameter	Symbol	Value	Units
Input Voltage	V _{IN}	4.5 – 24	V
Output Voltage	V _{OUT}	3.3	V
Output Current	I _{OUT}	1.8	A

EV2360DG-00B EVALUATION BOARD

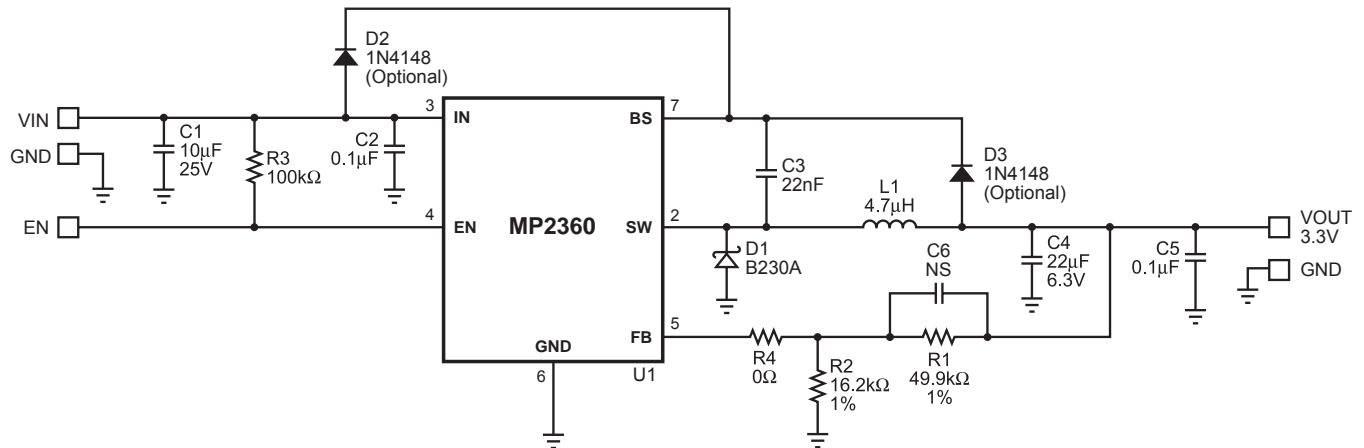


(L x W x H) 1.8" x 1.6" x 0.4"
(4.5cm x 4.0cm x 1.0cm)

Board Number	MPS IC Number
EV2360DG-00B	MP2360DG



EVALUATION BOARD SCHEMATIC



EV2360DG-00B BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	10µF	Ceramic Capacitor, 25V, X7R	1210	TDK	C3225X7R1E106M
1	C2, C5	0.1µF	Ceramic Capacitor, 50V, X7R	805	TDK	C2012X7R1H104K
1	C3	22nF	Ceramic Capacitor, 50V, X7R	603	TDK	C1608X7R1H223K
2	C4	22µF	Ceramic Capacitor, 6.3V, X5R	1210	TDK	C3225X5R0J226M
1	C6		Not Stuffed, Optional			
1	R1	49.9kΩ	Film Resistor, 1%	603	Panasonic	ERJ-3EKF4992V
1	R2	16.2kΩ	Film Resistor, 1%	603	Panasonic	ERJ-3EKF1622V
1	R3	100kΩ	Film Resistor, 5%	603	Panasonic	ERJ-3GEYJ104V
1	R4	0Ω	Film Resistor, 5%	603	Panasonic	ERJ-3GEY0R00V
1	L1	4.7µH	Inductor, 3.3A, DS84LC	SMD	Toko	B1015AS-4R7N
1	D1		Diode Schottky, 30V, 2A	SMA	Diodes Inc	B230A-13
2	D2, D3		Not Stuffed, Optional			
1	U1		DC/DC Converter	QFN8	MPS	MP2360DG

PRINTED CIRCUIT BOARD LAYOUT

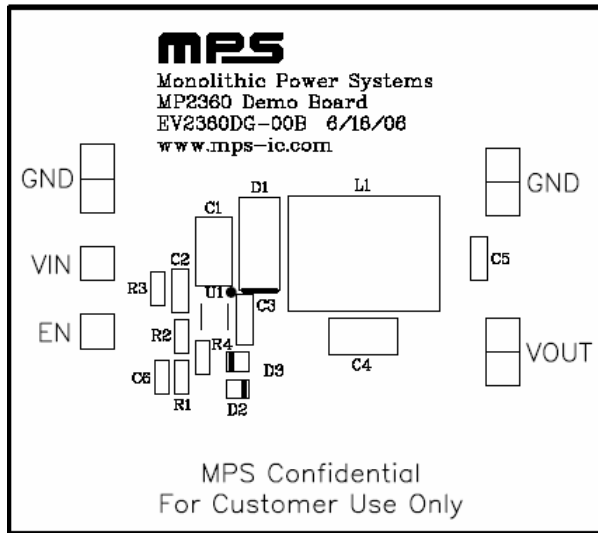


Figure 1—Top Silk Layer

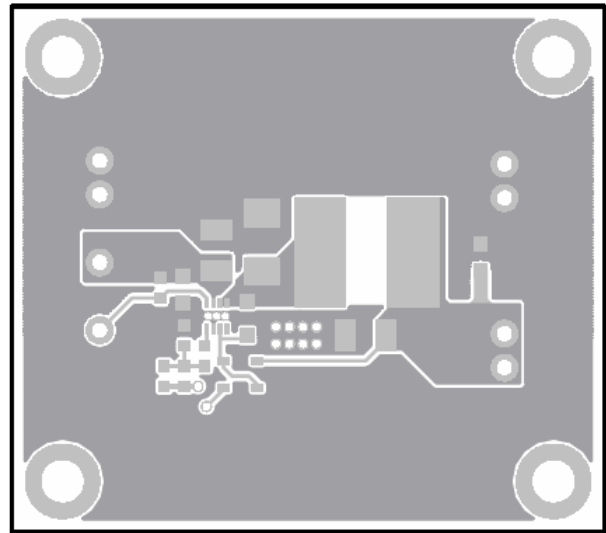


Figure 2—Top Layer

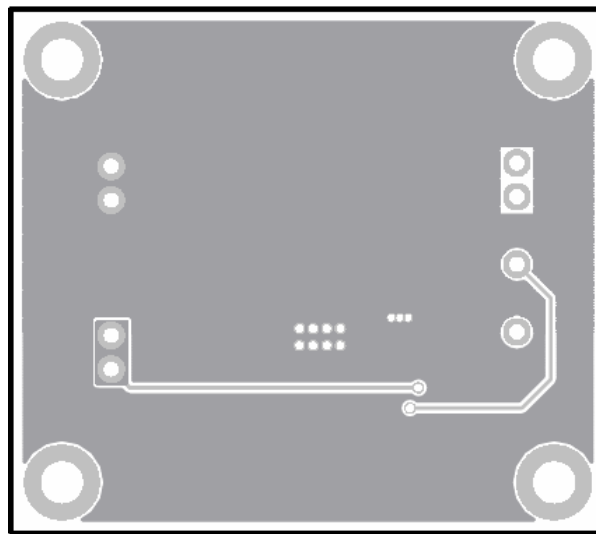


Figure 3—Bottom Layer

QUICK START GUIDE

1. Connect the positive terminal of the load to VOUT pin, and the negative terminal of the load to GND pin.
2. Preset the power supply output to 4.5V – 24V 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. Turn the power supply on. The board will automatically startup.
5. To use the Enable function, apply a digital input to EN pin. Drive EN higher than 1.2V to turn on the regulator, drive EN less than 0.4V to turn it off.
6. The output voltage V_{OUT} can be changed by varying R1. Calculate the new values by the following formula:

$$R1 = R2 \times \left(\frac{V_{OUT}}{0.81} - 1 \right)$$

Where $R2 = 16.2k\Omega$

Example:

For $V_{OUT} = 3.3V$:

$$R1 = 16.2k\Omega \times \left(\frac{3.3}{0.81} - 1 \right) = 49.8k\Omega$$

Therefore, use a 49.9k Ω standard 1% value resistor.

NOTICE: The information in this document is subject to change without notice. Users should warrant and guarantee that third party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.