



The Future of Analog IC Technology®

EV4460DQ-01B

2.5A, 4MHz, 36V

Step-Down Converter Evaluation Board

DESCRIPTION

The EV4460DQ-01B is an evaluation board for the MP4460, a high frequency step-down regulator with an integrated power MOSFET.

The wide input range of MP4460 accommodates a variety of step-down applications, including those in an automotive input environment. A 100µA operational quiescent current allows use in battery-powered applications.

The frequency foldback helps prevent inductor current runaway during startup and thermal shutdown provides reliable, fault tolerant operation.

By switching at 4MHz, the MP4460 is able to prevent EMI (Electromagnetic Interference) noise problems, such as those found in AM radio and ADSL applications.

FEATURES

- 2.5 A Output Current
- Wide 7.5V to 36V Operating Range
- Output at 3.3V
- Up to 95% Efficiency
- Up to 4MHz Programmable Switching Frequency
- Ceramic Capacitor Stable
- Internal Soft-Start

APPLICATIONS

- High Voltage Power Conversion
- Automotive Systems
- Industrial Power Systems
- Distributed Power Systems
- Battery Powered Systems

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ELECTRICAL SPECIFICATIONS

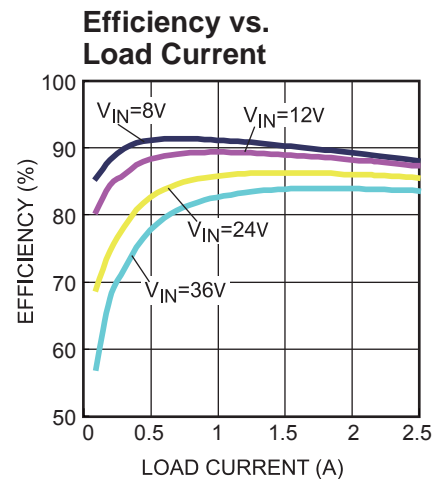
Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	7.5 – 36	V
Output Voltage	V_{OUT}	3.3	V
Output Current	I_{OUT}	2.5	A

EV4460DQ-01B EVALUATION BOARD

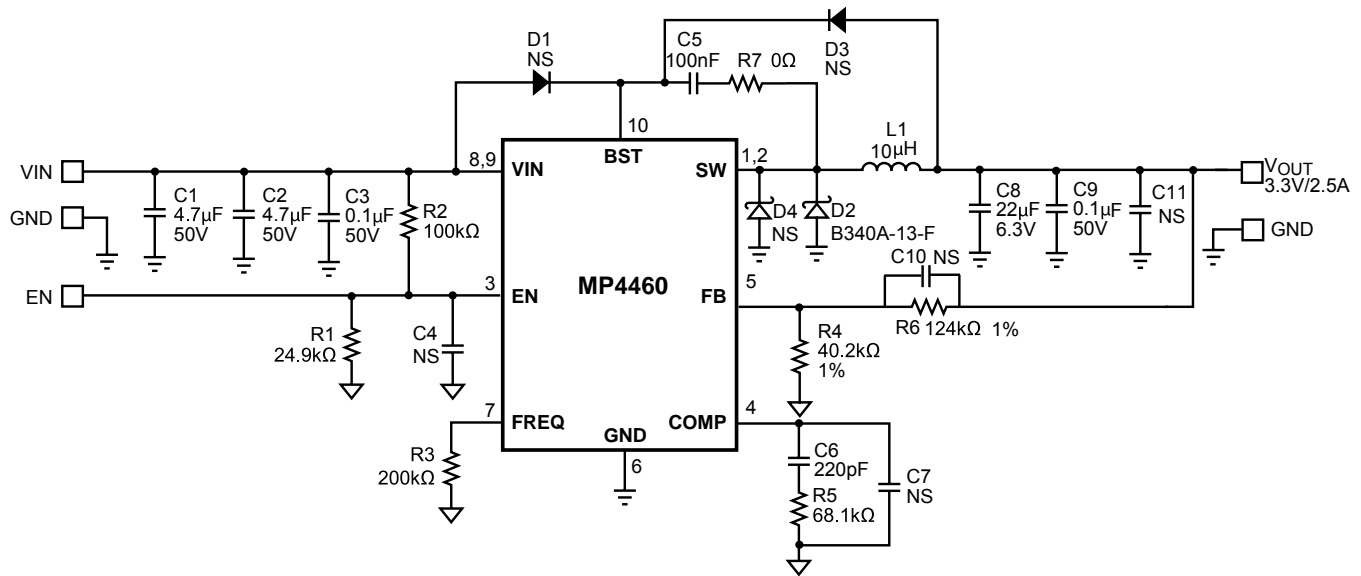


(L x W x H) 1.8" x 1.8" x 0.4"
(4.6cm x 4.6cm x 1.0cm)

Board Number	MPS IC Number
EV4460DQ-01B	MP4460DQ



EVALUATION BOARD SCHEMATIC



EV4460DQ-01B BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	4.7 μ F	Ceramic Cap. 50V, X7R	SMC1210	muRata	GRM32ER71H475K
1	C3	0.1 μ F	Ceramic Cap. 50V, X7R	SMC0603	muRata	GRM188R71H104K
4	C4, C7, C10, C11		Do Not Stuff			
2	C5, C9	0.1 μ F	Ceramic Cap. 16V, X7R	SMC0603	muRata	GRM188R71C104K
1	C6	220pF	Ceramic Cap. 50V, COG	SMC0603	muRata	GRM188COG1H221K
1	C8	22 μ F	Ceramic Cap. 6.3V, X5R	SMC1210	muRata	GRM32ER60J226K
3	D1, D3, D4		Do Not Stuff			
1	D2		Diode Schottky, 40V, 3A	SMA	Diodes Inc	B340A-13-F
1	R1	24.9k	Film Resistor, 1%	SMR0603	Panasonic	ERJ-3EKF2492V
1	R2	100k	Film Resistor, 5%	SMR0603	Panasonic	ERJ-3GEYJ104V
1	R3	200k	Film Resistor, 5%	SMR0603	Panasonic	ERJ-3GEYJ204V
1	R4	40.2k	Film Resistor, 1%	SMR0603	Panasonic	ERJ-3EKF4022V
1	R5	68.1k	Film Resistor, 1%	SMR0603	Panasonic	ERJ-3EKF6812V
1	R6	124k	Film Resistor, 1%	SMR0603	Panasonic	ERJ-3EKF1243V
1	R7	0	Film Resistor, 5%	SMR0603	Panasonic	ERJ-3GEY0R00V
1	L1	10 μ H	Inductor, 4A	SMD	Sumida	CDRH8D43-100
					Cooper	SD8350-100-R
1	U1		Step-Down Regulator	QFN10	Monolithic Power Systems Inc.	MP4460DQ

PRINTED CIRCUIT BOARD LAYOUT

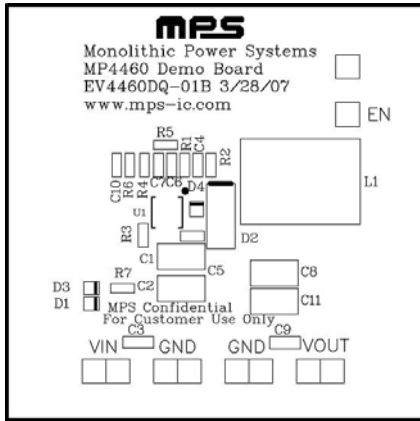


Figure 1—Top Silk Layer

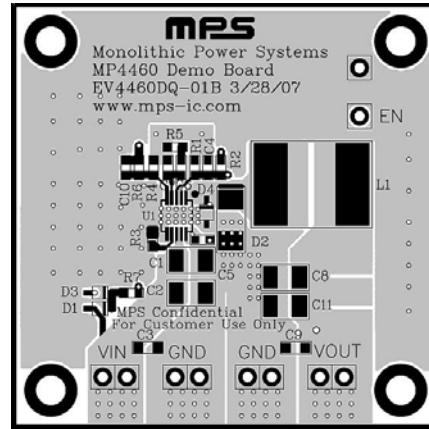


Figure 2—Top Layer

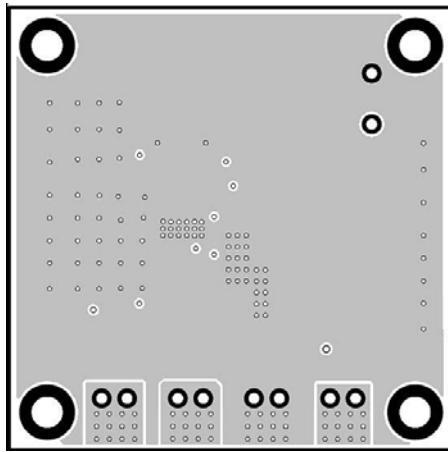


Figure 3—Inner Layer 1

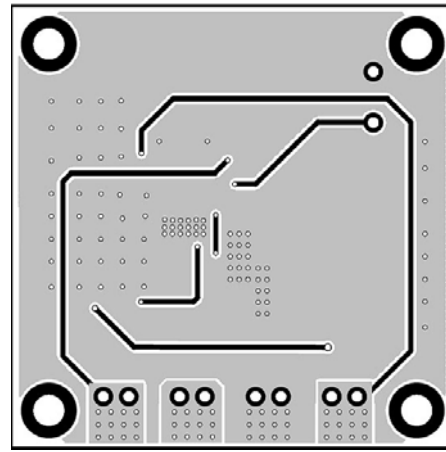


Figure 4—Inner Layer 2

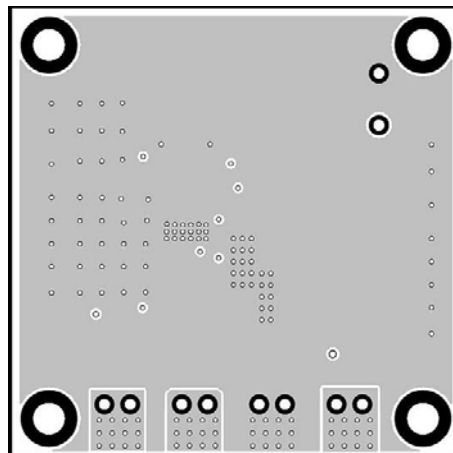


Figure 5—Bottom Layer