



The Future of Analog IC Technology®

EV4459DQT-00A

1.5A, 4MHz, 36V Step-Down Converter

DESCRIPTION

The EV4459DQT-00A is an evaluation board for the MP4459, a high frequency step-down switching regulator with an integrated internal high-side high voltage power MOSFET. The IC provides 1.5A output with current mode control for fast loop response and easy compensation.

High power conversion efficiency over a wide load range is achieved by scaling down the switching frequency at light load condition to reduce the switching and gate driving losses.

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

By switching at 4MHz, the MP4459 prevents EMI (Electromagnetic Interference) noise problems, such as those found in AM radio and ADSL applications.

FEATURES

- Wide Operating Input Range
- Up to 4MHz Programmable Switching Frequency
- Precision Current Limit without a Current Sensing Resistor
- Up to 95% Efficiency
- Fully Assembled and Tested

APPLICATIONS

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

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

ELECTRICAL SPECIFICATIONS

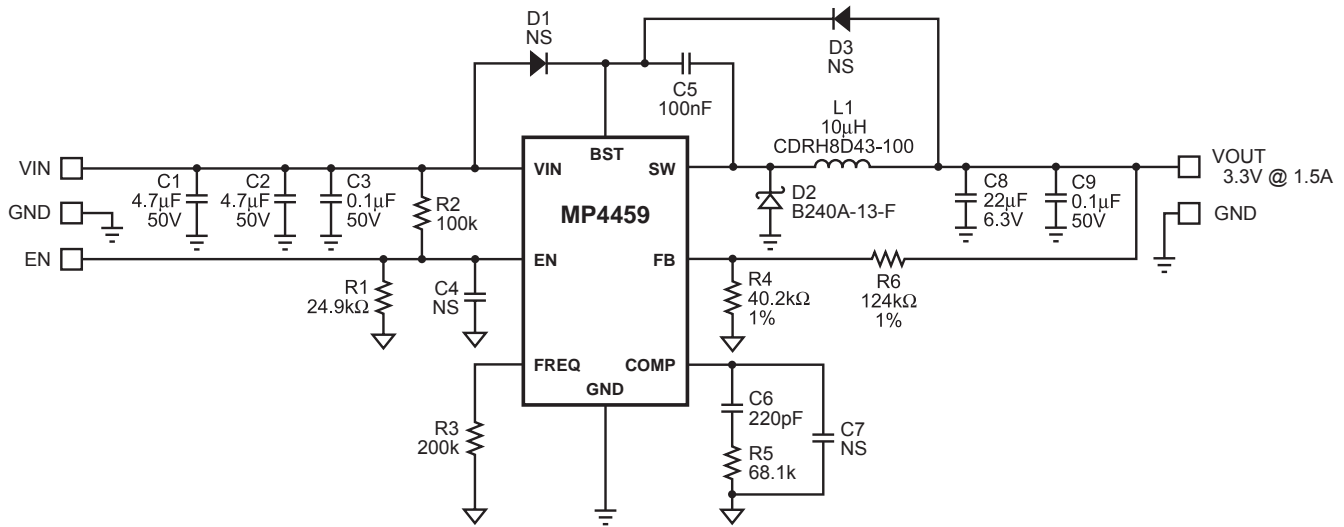
Parameter	Symbol	Value	Units
Input Voltage	V _{IN}	36 Max	V
Output Voltage	V _{OUT}	3.3	V
Output Current	I _{OUT}	1.5	A

EV4459DQT-00A 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
EV4459DQT-00A	MP4459DQT

EVALUATION BOARD SCHEMATIC

EV4459DQT-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	4.7µF	Ceramic Cap, 50V, X7R	1210	Murata	GRM32ER71H475KA88L
2	C3, C9	0.1µF	Ceramic Cap, 50V, X7R	805	TDK	C2012X7R1H104K
2	C4, C7		Do Not Stuff			
1	C5	100nF	Ceramic Cap, 50V, X7R	603	TDK	C1608X7R1H104K
1	C6	220pF	Ceramic Cap, 50V, C0G	603	TDK	C1608C0G1H221J
1	C8	22µF	Ceramic Cap, 6.3V, X5R	1210	TDK	C3225X5R0J226M
2	D1, D3		Do Not Stuff			
1	D2		Diode Schottky, 40V, 2A	SMA	Diodes Inc	B240A-13-F
1	R1	24.9k	Film Res, 1%	603	Panasonic	ERJ-3EKF2492V
1	R2	100k	Film Res, 5%	603	Panasonic	ERJ-3GEYJ104V
1	R3	200k	Film Res, 5%	603	Panasonic	ERJ-3GEYJ204V
1	R4	40.2k	Film Res, 1%	603	Panasonic	ERJ-3EKF4022V
1	R5	68.1k	Film Res, 1%	603	Panasonic	ERJ-3EKF6812V
1	R6	124k	Film Res, 1%	603	Panasonic	ERJ-3EKF1243V
1	L1	10µH	Inductor, 4.0A	SMD	Sumida	CDRH8D43-100
1	U1		Step-Down Regulator	QFN10	MPS	MP4459DQT

PRINTED CIRCUIT BOARD LAYOUT

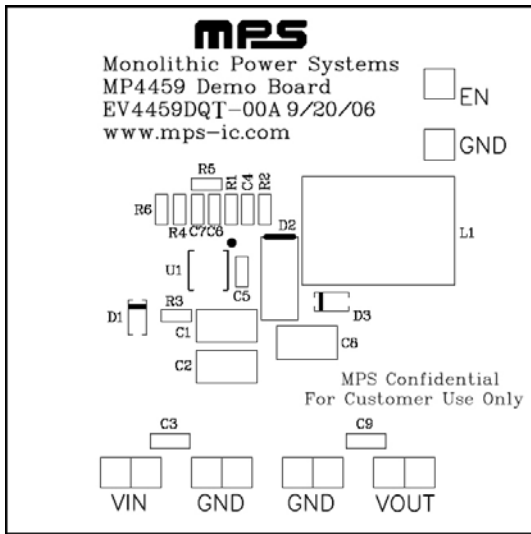


Figure 1—Top Silk Layer

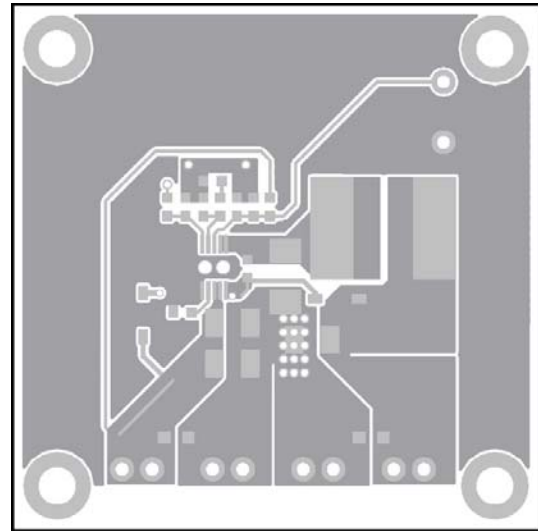


Figure 2—Top Layer

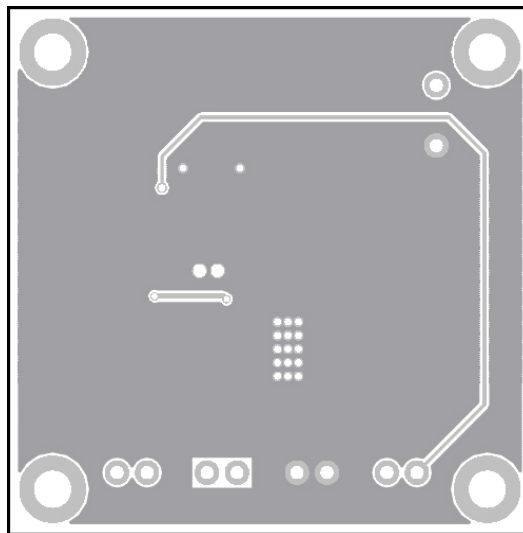


Figure 3—Bottom Layer