

DESCRIPTION

The EV4569-N-00A is an evaluation board for the MP/MPQ4569GN, a step-down switching regulator with integrated high-side/low-side, high-voltage power MOSFETs. It provides a highly efficient output of up to 0.3A.

The wide 4.5V to 75V input range accommodates a variety of step-down applications in automotive environment. A 5 μ A shutdown mode quiescent current in full temperature range is good for battery-powered applications.

It allows for high power conversion efficiency over a wide load range by scaling down the switching frequency under light-load condition to reduce the switching and gate driver losses.

The EV4569-N-00A is assembled and tested with SOIC-8 EP package.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	4.5-75	V
Output Voltage	V_{OUT}	3.3	V
Output Current	I_{OUT}	0.3	A

FEATURES

- 20 μ A Quiescent Current (Active mode)
- Wide 4.5V to 75V Operating Input Range
- Programmable Soft-Start
- FB-Tolerance: 1% at Room Temperature; 2% at Full Temperature.
- Adjustable Output
- Low Shutdown Mode Current: 5 μ A
- Available in AEC-Q100 Grade 1
- Fully Assembled and Tested

APPLICATIONS

- Automotive Systems
- Industrial Power Systems
- Distributed Power Systems
- Battery Powered Systems

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

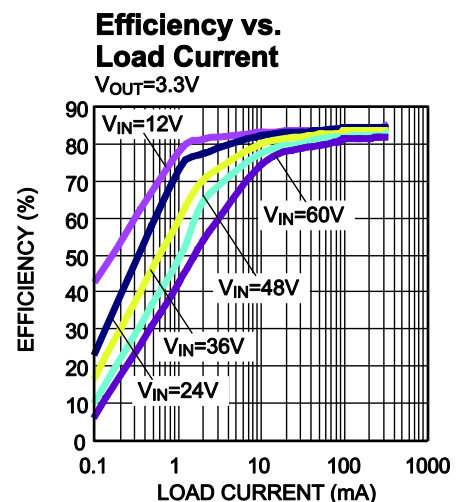
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EV4569-N-00A EVALUATION BOARD

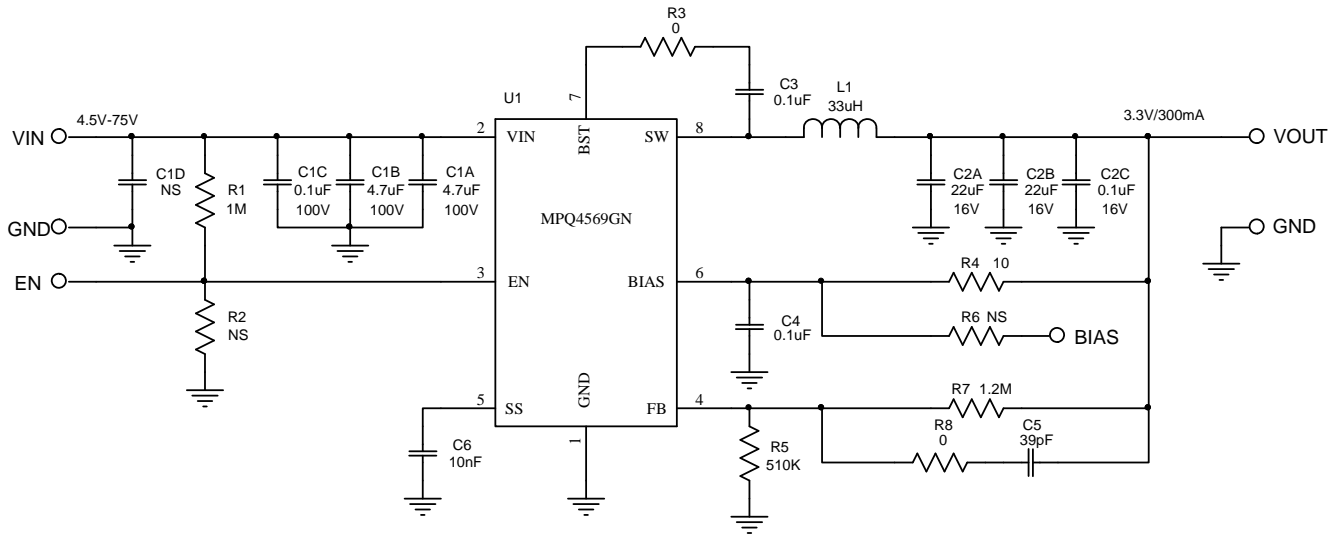


(L x W x H) 2.5" x 2.5" x 0.2"
(6.4cm x 6.4cm x 0.5cm)

Board Number	MPS IC Number
EV4569-N-00A	MPQ4569GN



EVALUATION BOARD SCHEMATIC

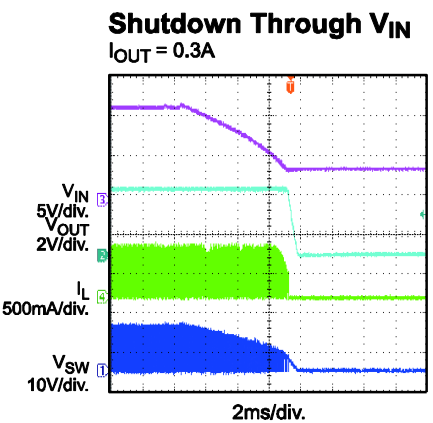
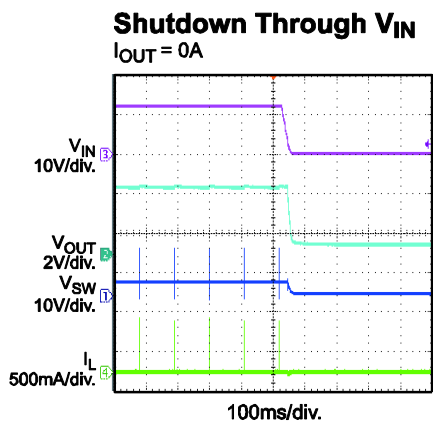
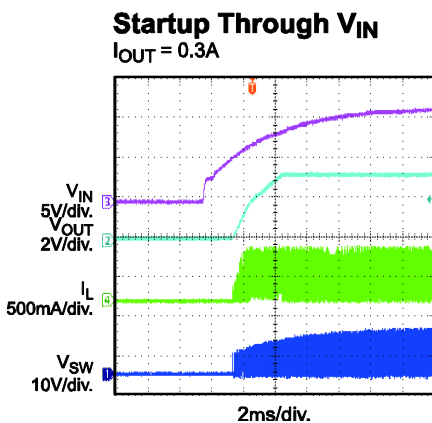
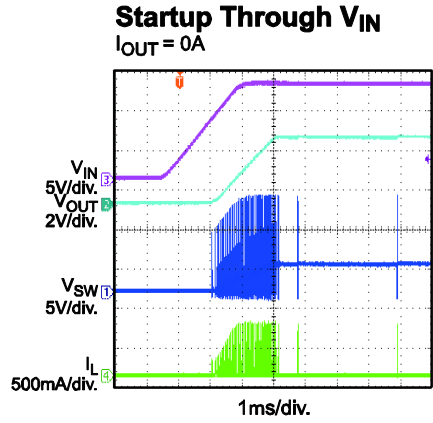
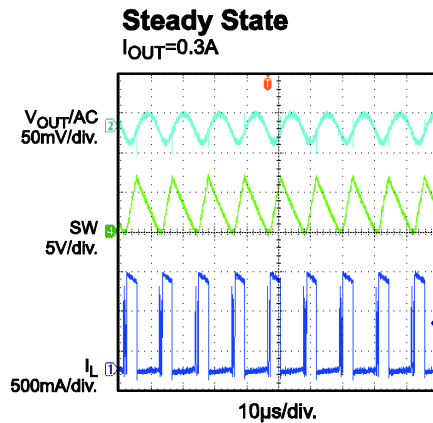
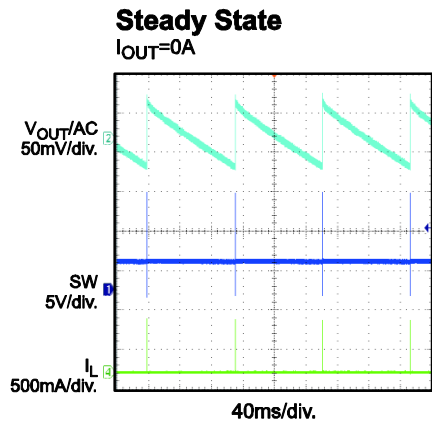
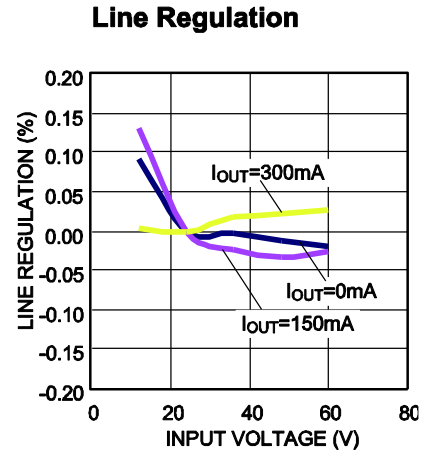
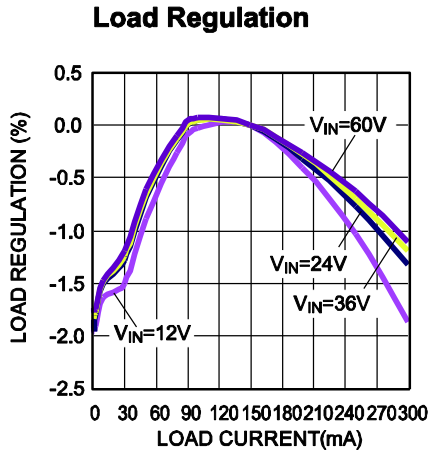
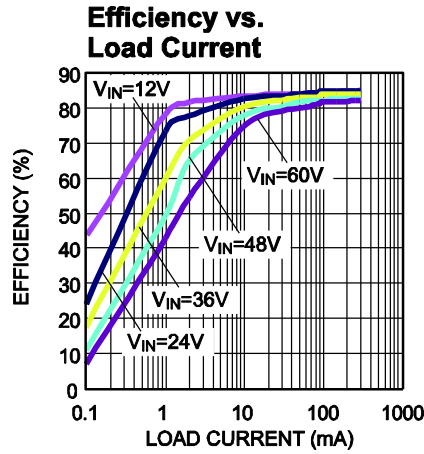


EV4569-N-00A BILL OF MATERIALS

Qty.	Designator	Value	Description	Package	Manufacture	Manufacture_PN
2	C1A, C1B	4.7uF	Ceramic Capacitor; 100V;X7S;1210	1210	TDK	C3225X7S2A475K
1	C1C	0.1uF	Ceramic Capacitor; 100V;X7R;0603;	0603	muRata	GRM188R72A104KA35D
2	C2C, C2B	22uF	Ceramic Capacitor; 16V;X7R;1210	1210	muRata	GRM32ER71C226KE18L
3	C3, C4, C2C	0.1uF	Ceramic Capacitor; 16V;X7R;0603	0603	muRata	GRM188R71C104KA01D
1	C5	39pF	Ceramic Capacitor; 50V;C0G;0603	0603	muRata	GRM1885C1H390JA01
1	C6	10nF	Ceramic Capacitor; 50V;X7R;0603;	0603	muRata	GRM188R71H103KA01D
1	C1D	NS				
1	L1	33uH	Inductor;33uH; 110mΩ;1.55A	SMD	TDK	CLF7045T-330M-H
			Inductor;33uH; 163mΩ;1.2A	SMD	ABC	DM5028330ML
1	R1	1M	Film Resistor;1%;	0603	Yageo	RC0603FR-071ML
2	R3, R8	0	Film Resistor;5%;	0603	Yageo	RC0603JR-070RL
1	R4	10	Film Resistor;5%;	0603	Yageo	RC0603JR-0710RL
1	R5	510K	Film Resistor;1%;	0603	Yageo	RC0603FR-07510KL
1	R7	1.2M	Film Resistor;1%	0603	Yageo	RC0603FR-071M2L
2	R2, R6	NS				
1	U1		Step-Down Converter	SOIC-8 EP	MPS	MPQ4569GN

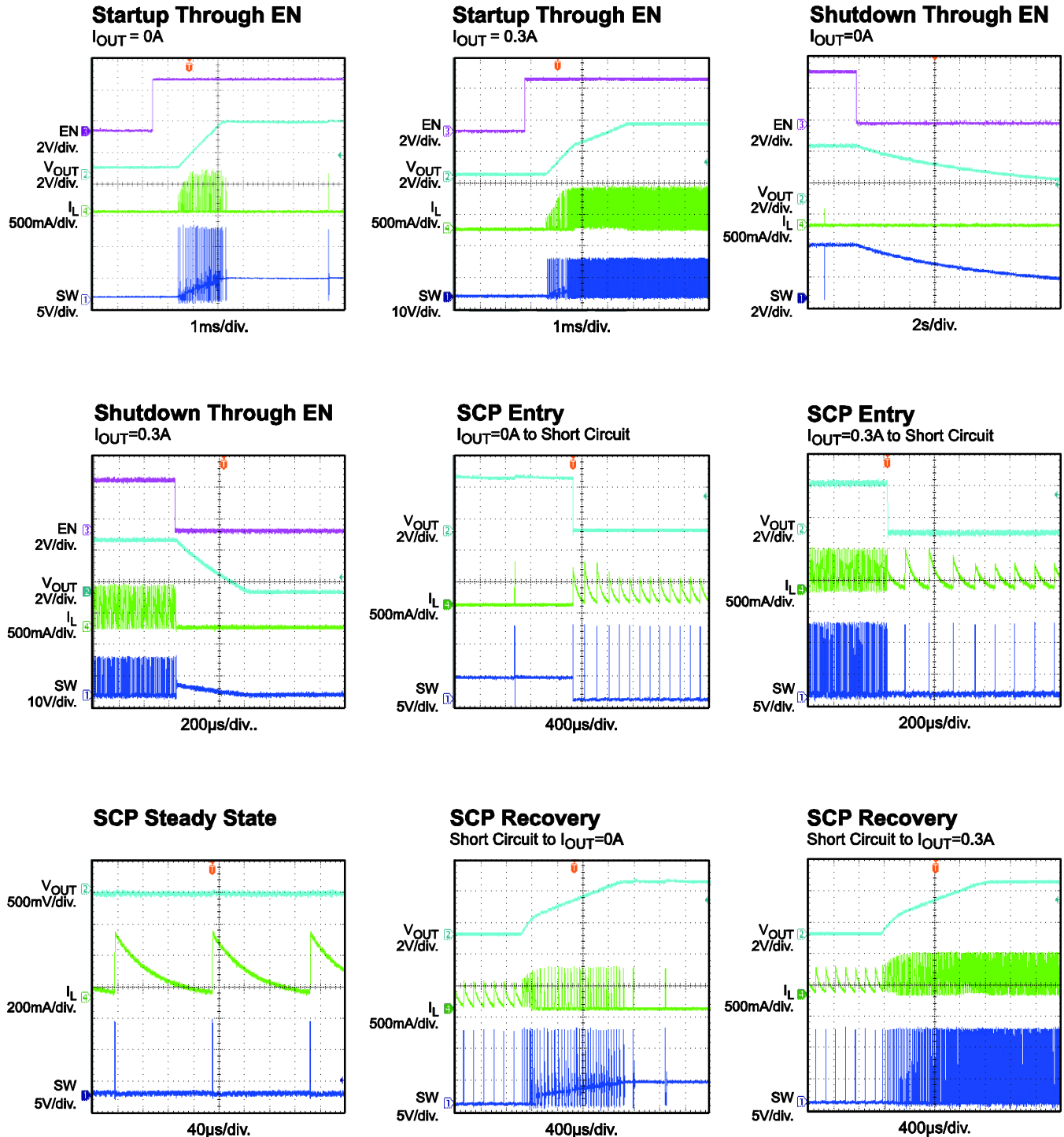
EVB TEST RESULTS

$V_{IN} = 12V$, $V_{OUT} = 3.3V$, $L = 33\mu H$, $C_{OUT} = 2 \times 22\mu F$, $T_A = +25^\circ C$, unless otherwise noted.



EVB TEST RESULTS (continued)

$V_{IN} = 12V$, $V_{OUT} = 3.3V$, $L = 33\mu H$, $C_{OUT} = 2 \times 22\mu F$, $T_A = +25^\circ C$, unless otherwise noted.



PRINTED CIRCUIT LAYOUT

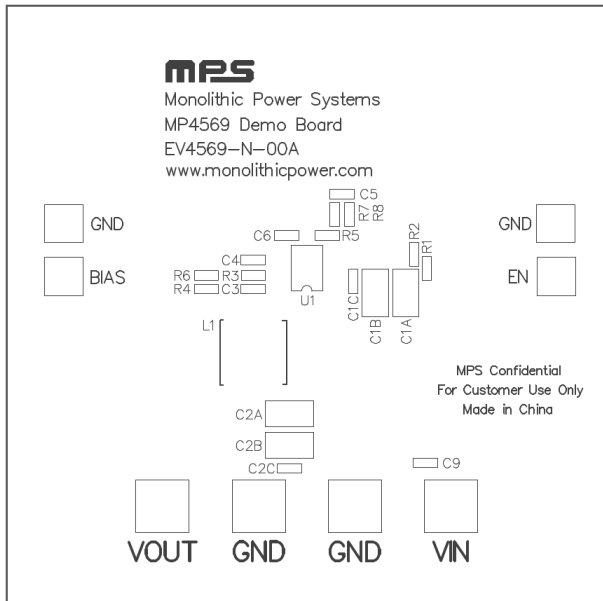


Figure 1 – Top Silk Layer

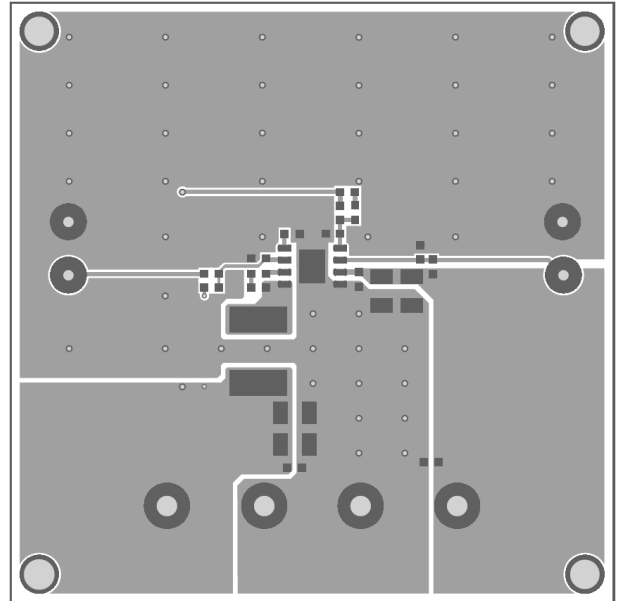


Figure 2 – Top Layer

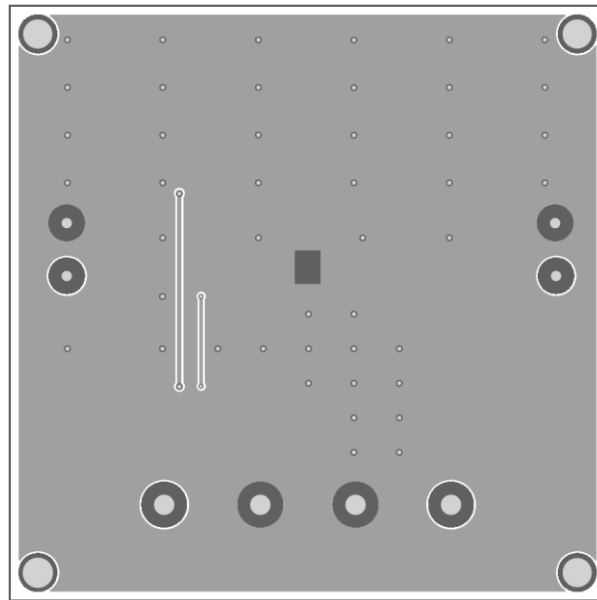


Figure 3 – Bottom Layer