EV8619EQJ-00A

25V, 8A, 600kHz Synchronous Step-Down Converter EV Board

The Future of Analog IC Technology

DESCRIPTION

The EV8619EQJ-00A is an evaluation board for the MP8619, a monolithic synchronous buck regulator.

This EV board can deliver 8A continuous load current over an operating input voltage 8V to 25V. High efficiency power conversion is achieved through the use of synchronous rectification techniques.

Current mode control is implemented, which provides fast transient response and cycle-by-cycle current limiting. The EV board will go into hiccup mode to protect against over current/short circuit.

This EV board can be turned on or shut down via a remote ON/OFF input that is referenced to ground. This input is compatible with popular logic devices. Built-in soft-start prevents inrush current at turn-on.

This EV board also has power good indicator.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	8–25	V
Output Voltage	V_{OUT}	3.3	V
Output Current	I_{OUT}	8	A

FEATURES

- 8A Output Current
- 8V to 25V Operating Input Range
- Adjustable Output from 0.8V
- Fixed 600kHz Switching Frequency
- Sync from 300kHz to 2MHz External Clock
- Internal Compensation
- OCP Protection and Thermal Shutdown

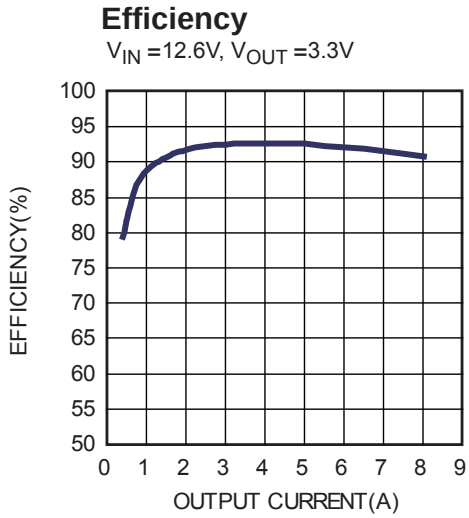
APPLICATIONS

- µP/ASIC/DSP/FPGA Core and I/O Supplies
- Printers and LCD TVs
- Network and Telecom Equipment
- Point of Load Regulators

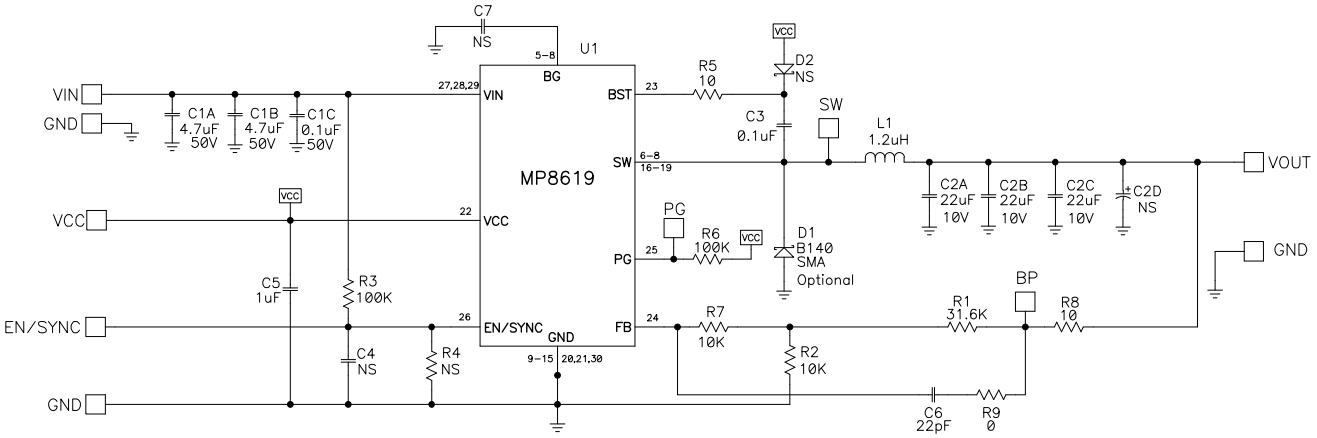
EV8619EQJ–00A EVALUATION BOARD

(L x W x H) 3.37" x 3.37" x 0.5"

Board Number	MPS IC Number
EV8619EQJ-00A	MP8619EQJ



EVALUATION BOARD SCHEMATIC



EV8619EQJ–00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1A, C1B	4.7µF	Ceramic Cap. 50V, X7R	SMC1210	Murata	GRM32ER71H475KA88L
2	C1C, C3	0.1µF	Ceramic Cap. 50V, X7R	SMC0603	Murata	GRM188R71H104KA93D
3	C2A, C2B, C2C	22µF	Ceramic Cap. 10V, X7R	SMC1210	Murata	GRM32ER71A226KE20L
3	C2D, C4, C7	NS	Do Not Stuff			
1	C5	1µF	Ceramic Cap. 25V, X7R	SMC0603	Murata	GRM188R71E105KA12
1	C6	22pF	Ceramic Cap. 50V, COG	SMC0603	Murata	GRM1885C1H220JA01D
2	D1, D2	NS	Do Not Stuff			
1	R1	31.6kΩ	Film Resistor ,1%	SMR0603	Yageo	RC0603FR-0731K6L
2	R2, R7	10kΩ	Film Resistor, 1%	SMR0603	Yageo	RC0603FR-0710KL
2	R3, R6	100kΩ	Film Resistor, 1%	SMR0603	Yageo	RC0603FR-07100KL
1	R4	NS	Do Not Stuff	SMR0603		
2	R5, R8	10Ω	Film Resistor, 1%	SMR0603	Yageo	RC0603FR-0710RL
1	R9	0Ω	Film Resistor ,5%	SMR0603	Yageo	RC0603JR-070RL
1	L1	1.2µH	Irms=20.2A, Rdc=2.05mΩ	SMD 12X12x5.4mm	TOKO	FDA1254-1R2M
1	U1		Step-Down Regulator	QFN30 5x6mm	MPS	MP8619EQJ

PRINTED CIRCUIT BOARD LAYOUT

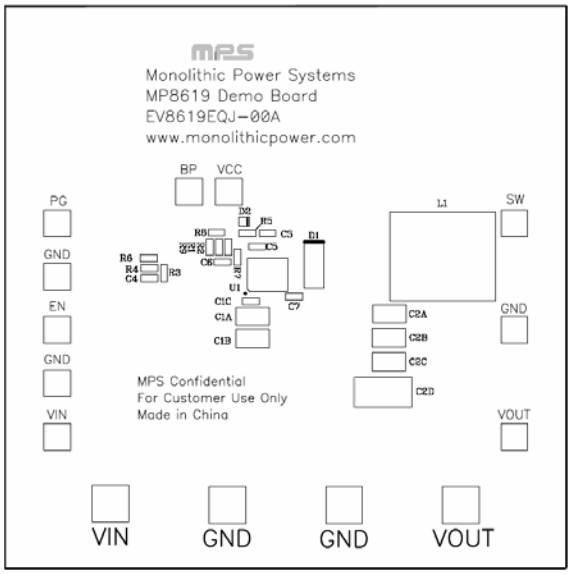


Figure 1—Top Silk Layer

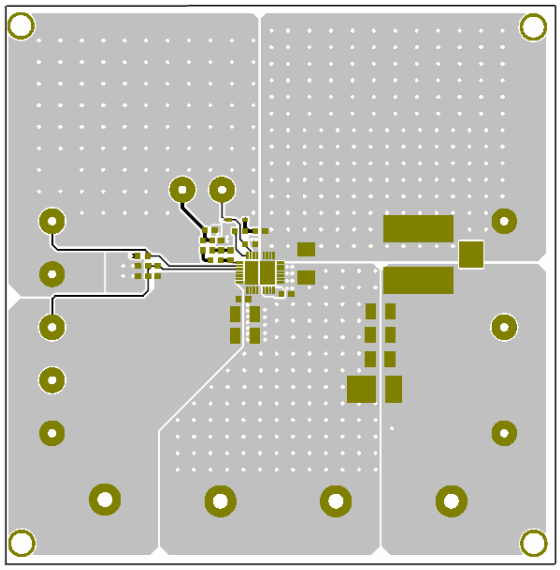


Figure 2—Top Layer

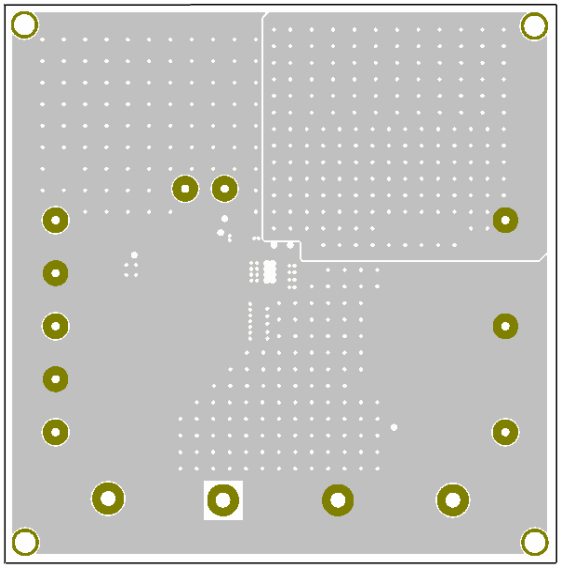


Figure 3—Inner Layer 1

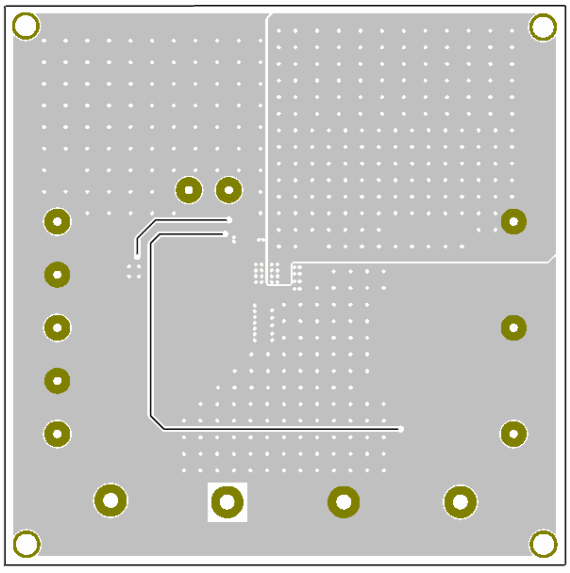


Figure 4—Inner Layer 2

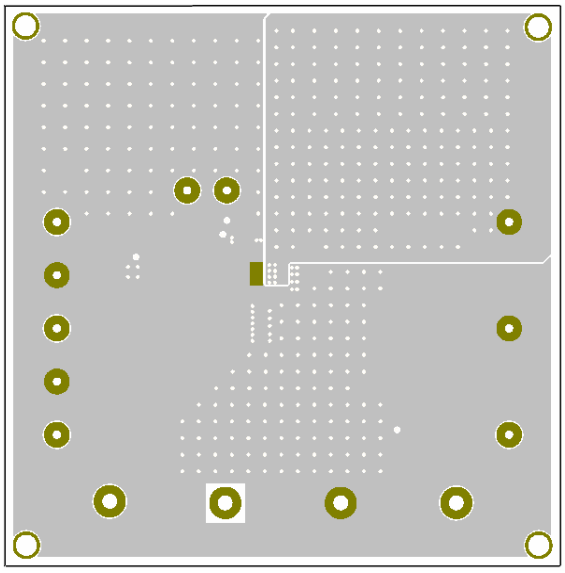


Figure 5—Bottom Layer

QUICK START GUIDE

1. Connect the positive and negative terminals of the load to VOUT and GND pins, respectively.
2. Preset the power supply output (VIN supply) to 8V-25V, then turn it off.
3. Connect the positive and negative terminals of the power supply output to VIN and GND pins, respectively.
4. Apply a digital input to the EN pin. Drive EN higher than 2V to turn on the regulator, drive EN less than 0.4V to turn it off.
5. Use R1 and R2 to set the output voltage with VFB = 0.8V. Follow the Application Information section in the device datasheet to select the proper value of R1, R2, inductor and output capacitor values when output voltage is changed.