

DESCRIPTION

The EV2207DQ-00B is an evaluation board for the MP2207, a monolithic synchronous buck regulator.

This EV board can deliver 3.5A continuous load current over an operating input voltage 3V to 16V. High efficiency power conversion is achieved through the use of synchronous rectification techniques. The output is adjustable over a range of 0.8V to $0.9 \times V_{IN}$ by means of an external resistor from FB pin to ground.

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.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	3–16	V
Supply Voltage	V_{CC}	2.5– 6	V
Output Voltage	V_{OUT}	1.8	V
Output Current	I_{OUT}	3.5	A

FEATURES

- 3.5A Output Current
- 3V to 16V Operating Input Range
- Adjustable Output from 0.8V to $0.9 \times V_{IN}$
- Fully Assembled and Tested

APPLICATIONS

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

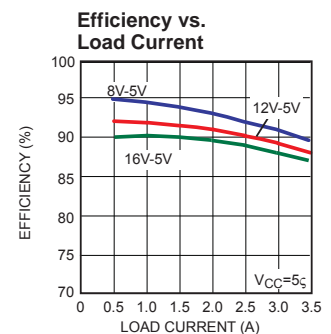
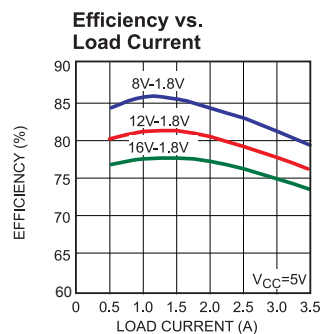
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EV2207DQ-00B EVALUATION BOARD

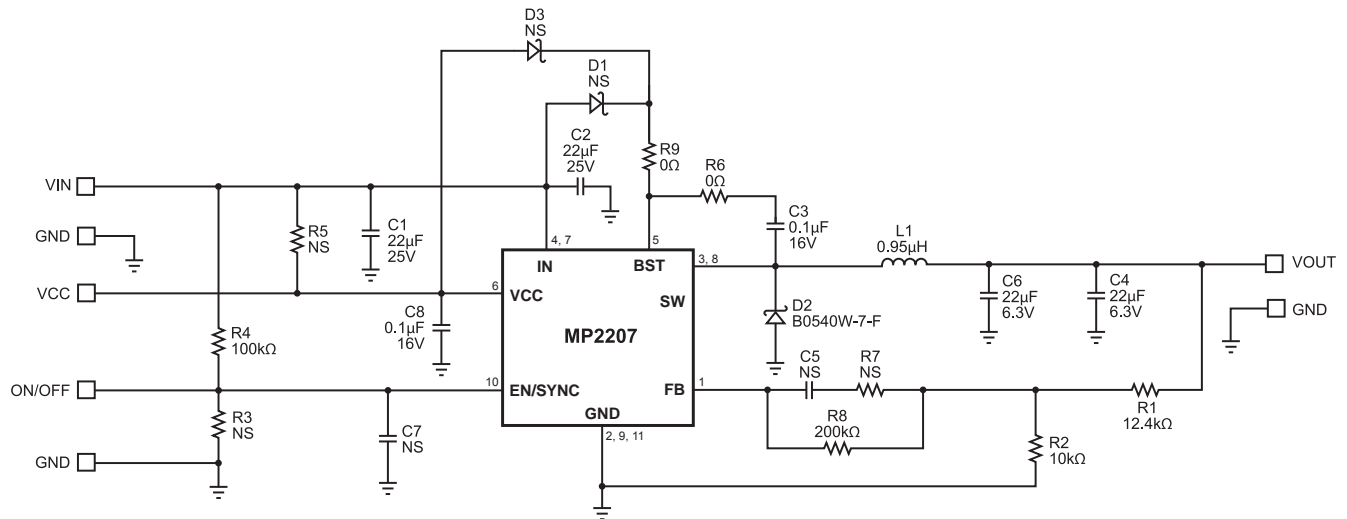


(L x W x H) 2.4" X 2.0" X 0.5"
(6.1cm x 5.1cm x 1.3cm)

Board Number	MPS IC Number
EV2207DQ-00B	MP2207DQ



EVALUATION BOARD SCHEMATIC



EV2207DQ-00B BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	22µF	Ceramic Cap., 25V, X7R	1210	Murata	GRM32ER71E226K
2	C3, C8	0.1µF	Ceramic Cap., 16V, X7R	0603	Murata	GRM188R71C104K
2	C4, C6	22µF	Ceramic Cap., 6.3V, X7R	1210	Murata	GRM32ER70J226K
2	C5, C7	NS	Not Stuffed	0603		
1	R1	12.4kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-0712K4L
1	R2	10kΩ	Film Resistor, 1%	0603	Yageo	RC0603FR-0710K0L
3	R3, R5, R7	NS	Not Stuffed			
1	R4	100kΩ	Film Resistor, 5%	0603	Yageo	RC0603FR-07100KL
1	R8	200kΩ	Film Resistor, 5%	0603	Yageo	RC0603JR-07200KL
2	R6, R9	0Ω	Film Resistor, 5%	0603	Yageo	RC0603JR-0700R0L
1	L1	0.95µH	Inductor, I _A =13A, DCR=6.4mΩ	SMD 7x7mm	Würth Electronics	744310095
2	D1, D3	NS	Not Stuffed			
1	D2	0.5A, 40V	Schottky Diode	SOD-123	Diodes Inc	B0540W-7-F
1	U1		Step-Down Regulator	QFN10 (3x3)	MPS	MP2207DQ

PRINTED CIRCUIT BOARD LAYOUT

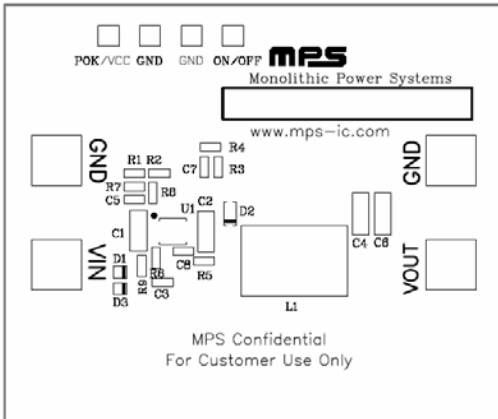


Figure 1—Top Silk Layer

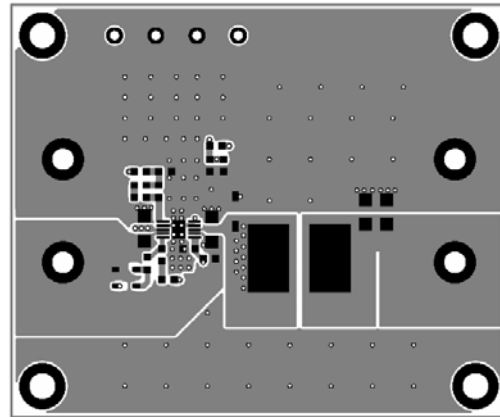


Figure 2—Top Layer

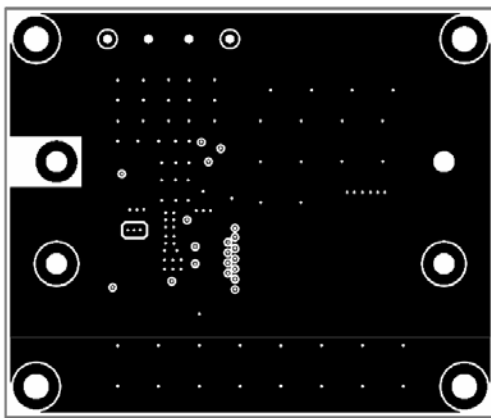


Figure 3—Inner Layer 1

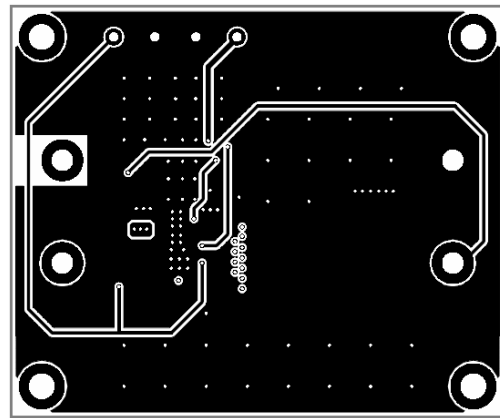


Figure 4—Inner Layer 2

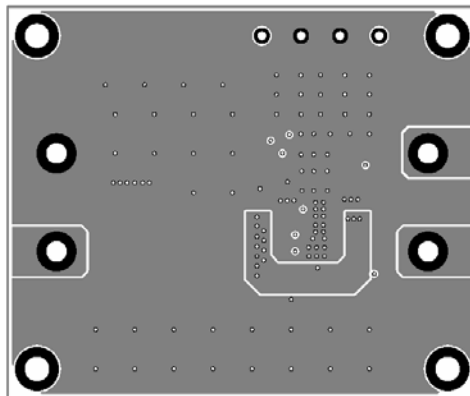


Figure 5—Bottom Layer

QUICK START GUIDE

1. Connect the positive and negative terminals of the load to the VOUT and GND pins, respectively.
2. Preset the power supply output (VIN supply) to 3V-16V, then turn it off.
3. Connect the positive and negative terminals of the power supply output to the VIN and GND pins, respectively.
4. Apply 3.3V-5V DC voltage to VCC and GND pins. Turn the power supply (VIN supply) on. The EV2207DQ will automatically startup.
5. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 1.6V to turn on the regulator, drive EN less than 0.4V to turn it off.
6. Use R1 and R2 to set the output voltage with $V_{FB} = 0.8V$. 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.

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