

DESCRIPTION

The EV2249DQ-00A is an evaluation board for the MP2249 that delivers 3A continuous load current over an operating input voltage 2.5V to 6V. The output is adjustable over a range of 0.6V to V_{IN} by means of an external resistor from FB pin to ground.

The current mode control used in MP2249 provides fast transient response and cycle-by-cycle current limiting. The EV board will go into latch-off mode to protect against over current/short circuit.

This EV board can be turned on or shut down via a remote EN input. This input is compatible with popular logic devices.

This EV board also has power good indicator. The output of PG is pulled to ground when output voltage is under or over 10% of its setting voltage.

FEATURES

- Up to 4.5A Peak Current
- 2.5V to 6V Operating Input Range
- Built-in Soft-Start
- Adjustable Output from 0.6V to 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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ELECTRICAL SPECIFICATIONS

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

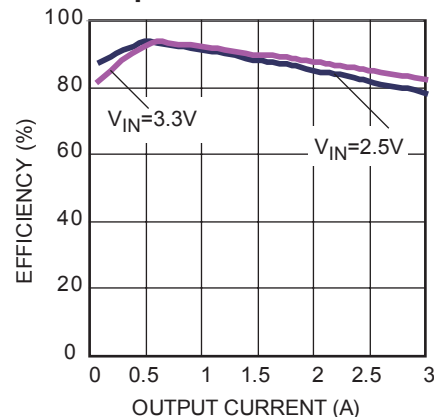
EV2249DQ-00A EVALUATION BOARD



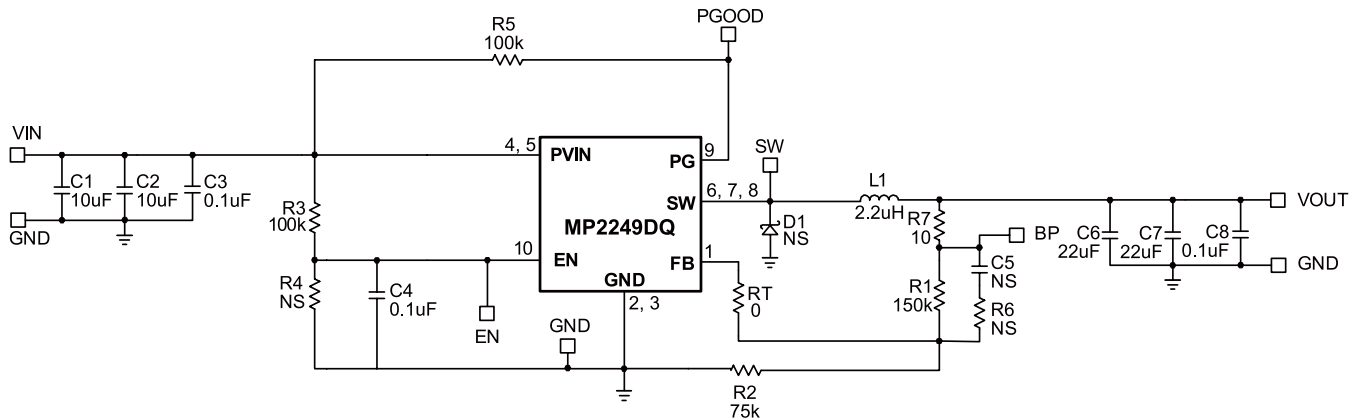
(L x W x H) 2.4" x 2.0" x 0.6"
(6.1cm x 5.1cm x 1.4cm)

Board Number	MPS IC Number
EV2249DQ-00A	MP2249DQT

Efficiency vs. Output Current



EVALUATION BOARD SCHEMATIC



EV2249DQ– BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
2	C1, C2	10µF	Ceramic Cap., 25V, X7R	1210	TDK	C3225X7R1E106K
0	C5	NS				
3	C3, C4, C8	0.1µF	Ceramic Cap., 50V, X7R	0603	TDK	C1608X7R1H104K
2	C6, C7	22µF	Ceramic Cap., 16V, X5R	1210	TDK	C3225X5R1C226M
2	R3, R5	100kΩ	Film Res., 1%	0603	Yageo	RC0603FR-07100KL
0	R4, R6	NS				
1	RT	0Ω	Film Res., 1%	0603	Yageo	RC0603JR-070RL
1	R2	75kΩ	Film Res., 1%	0603	Yageo	RC0603FR-0775KL
1	R1	150kΩ	Film Res., 1%	0603	Yageo	RC0603FR-07150KL
1	R7	10Ω	Film Res., 1%	0603	Yageo	RC0603FR-0710RL
1	L1	2.2µH	DCR=20mΩ, Irms=4.2A	SMD	Würth	744777002
0	D1	NS				
1	U1		Step-Down Converter	TQFN10	MPS	MP2249DQT

PRINTED CIRCUIT BOARD LAYOUT

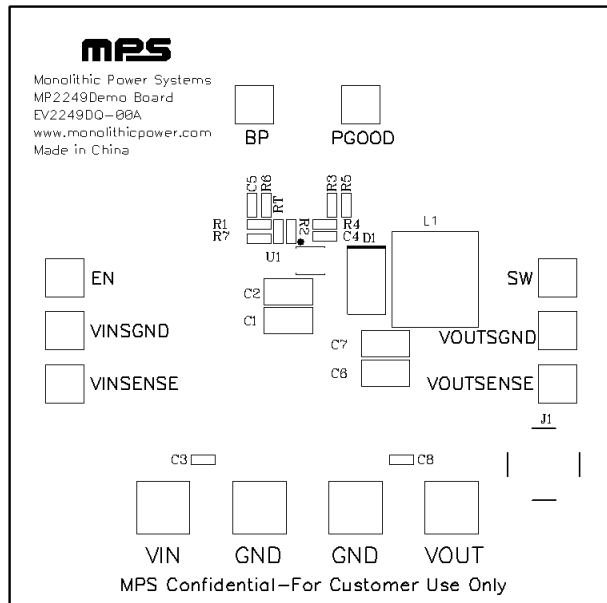


Figure 1—Top Silk Layer

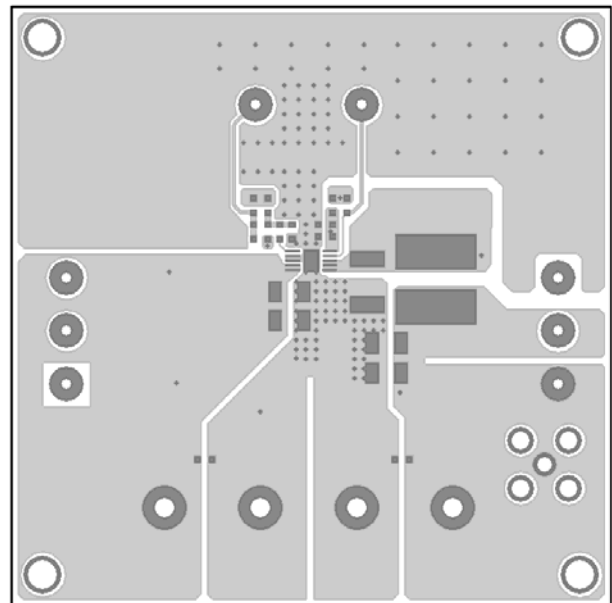


Figure 2—Top Layer

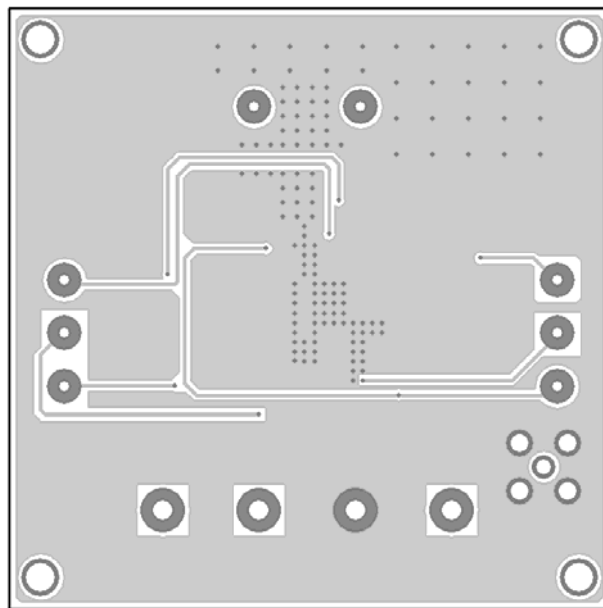


Figure 5—Bottom Layer

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 to 2.5V-6V, then turn it off.
3. Connect the positive and negative terminals of the power supply output to the VIN and GND pins, respectively.
4. Turn the power supply on. The EV2249DQ board will automatically startup.
5. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 1.8V 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 $V_{FB} = 0.6V$. 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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