



The Future of Analog IC Technology®

EV2235-J-00A

High-Efficiency, 3A, 16V, 800kHz, Sync. Step-Down Switcher Evaluation Board

DESCRIPTION

The EV2235-J-00A demonstrates MPS's MP2235, a high-frequency, synchronous, rectified, step-down converter with built-in high-side and low-side power MOSFETs. The MP2235 offers a very compact solution to achieve a 3A continuous output current with excellent load and line regulation over a wide input supply range. The MP2235 has synchronous mode operation for higher efficiency over the output current load range.

Current-mode operation provides fast transient response and eases loop stabilization.

Protective features includes OCP and thermal shutdown.

The MP2235 is available in a space saving 8-pin TSOT23 package.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	5 – 16	V
Output Voltage	V_{OUT}	3.3	V
Output Current	I_{OUT}	3	A

FEATURES

- Wide 5V to 16V Operating Input Range
- 80mΩ/30mΩ Low $R_{DS(ON)}$ Internal Power MOSFET
- Proprietary Switching-Loss-Reduction Technique
- High-Efficiency Synchronous Mode Operation
- Default 800kHz Switching Frequency
- Externally-Programmable Soft-Start
- OCP Protection and Hiccup
- Thermal Shutdown
- Output Adjustable from 0.8V
- Available in an 8-pin TSOT-23 Package

APPLICATIONS

- Notebook System and I/O Power
- Digital Set-Top Boxes
- Flat-Panel Television and Monitors
- Distributed Power 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.

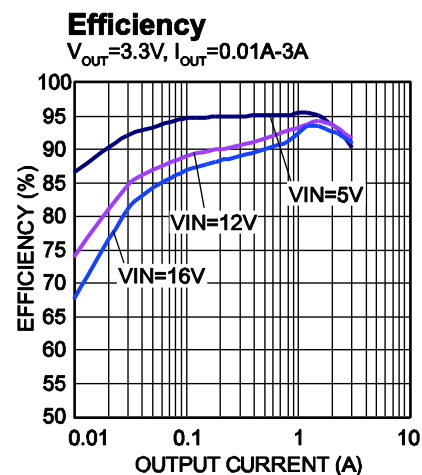
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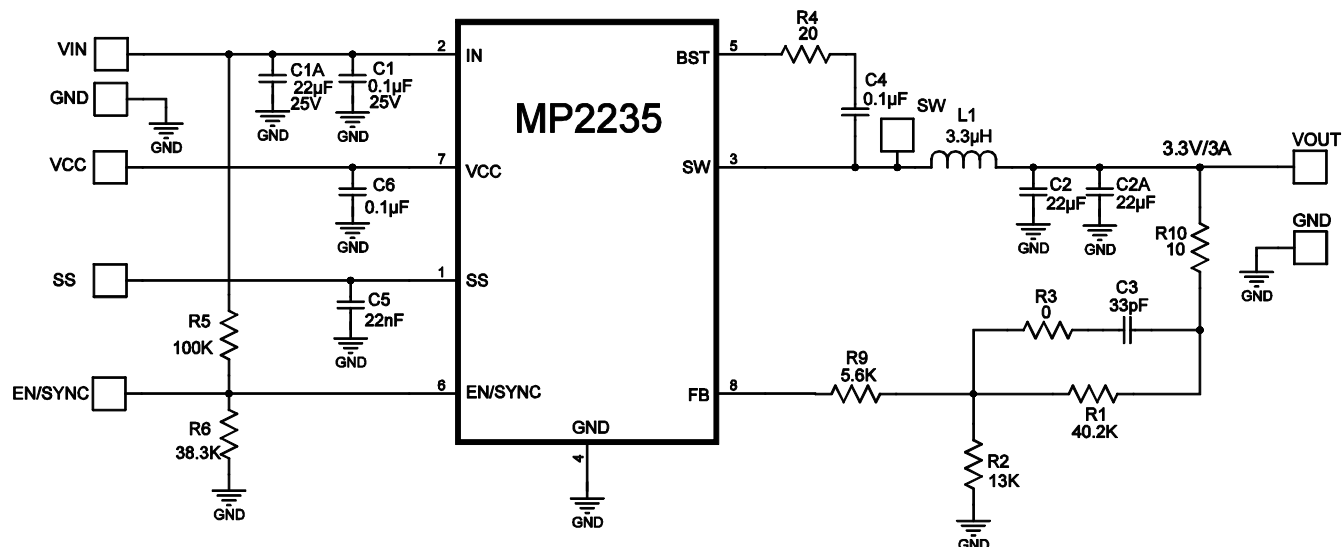
EV2235-J-00A EVALUATION BOARD



Board Number	MPS IC Number
EV2235-J-00A	MP2235GJ



EVALUATION BOARD SCHEMATIC



EV2235-J-00A BILL OF MATERIALS

Qty	RefDes	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	0.1uF	Ceramic Cap., 25V, X7R	0805	muRata	GRM21BR71E104KA01L
1	C1A	22uF	Ceramic Cap., 25V, X5R	1206	muRata	GRM31CR61E226KE15L
2	C2, C2A	22uF	Ceramic Cap., 10V, X7R	1206	muRata	GRM31CR70A226KE19L
1	C3	33pF	Ceramic Cap., 50V, C0G	0603	muRata	GRM1885C1H330JA01D
2	C4, C6	0.1uF	Ceramic Cap., 16V, X7R	0603	muRata	GRM188R71C104KA01D
1	C5	22nF	Ceramic Cap., 50V, X7R	0603	muRata	GRM188R71H223KA01D
	C7	NS				
1	R1	40.2K	Thick Film Res., 1%	0603	Yageo	RC0603FR-0740K2L
1	R2	13K	Thick Film Res., 1%	0603	Yageo	RC0603FR-0713KL
1	R3	0Ω	Thick Film Res., 1%	0603	Yageo	RC0603JR-070RL
1	R4	20Ω	Thick Film Res., 1%	0603	Yageo	RC0603FR-0720RL
1	R5	100K	Thick Film Res., 1%	0603	Yageo	RC0603FR-07100KL
1	R6	38.3K	Thick Film Res., 1%	0603	Yageo	RC0603FR-0738K3L
1	R9	5.6K	Thick Film Res., 1%	0603	Yageo	RC0603FR-075K6L
1	R10	10Ω	Thick Film Res., 1%	0603	Yageo	RC0603FR-0710RL
1	L1	3.3uH	Inductor, DCR=17.2mΩ, Is=11A	7x7x4	Würth	744311330
1	U1	MP2235GJ	Synchronous Step-Down Convert	TSOT23-8	MPS	MP2235GJ

PRINTED CIRCUIT BOARD LAYOUT

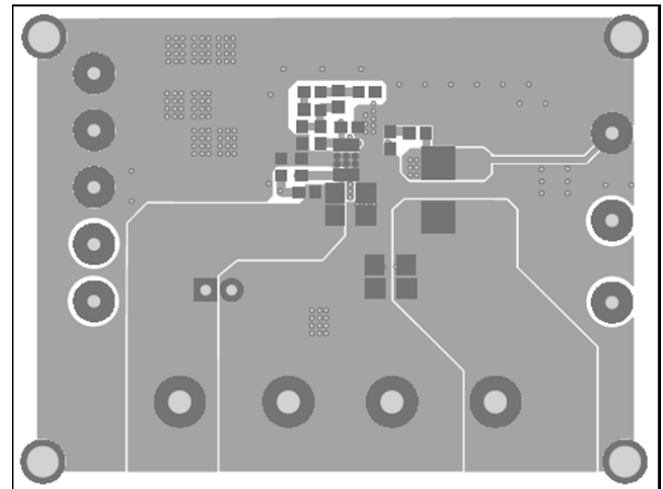
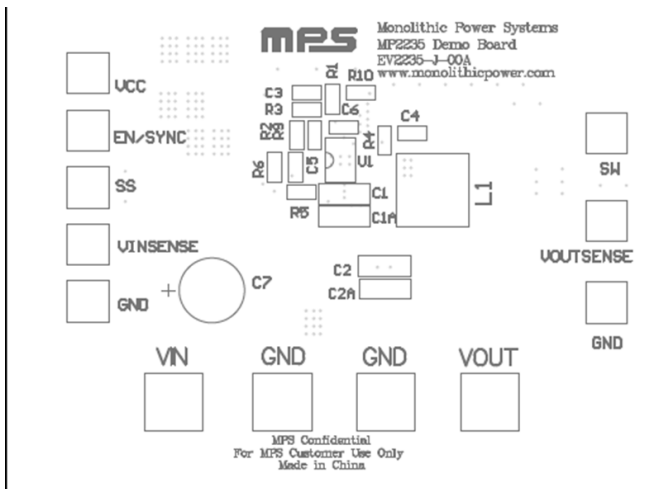


Figure 1—Top Silk Layer

Figure 2—Top Layer

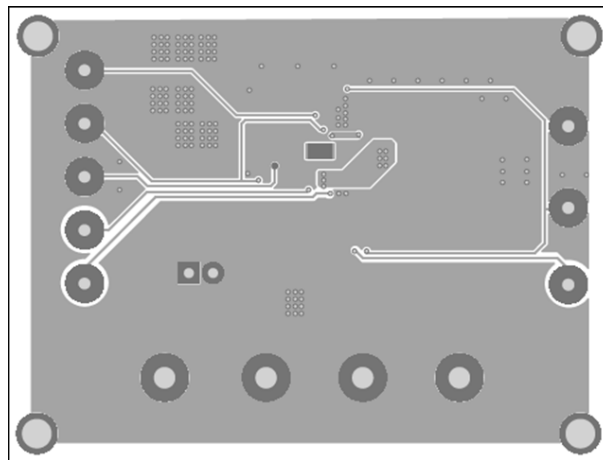


Figure 3—Bottom Layer

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 between 5V and 16V, and then turn off the power supply.
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 board will automatically start up.
5. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 1.4V to turn on the regulator or less than 1.25V to turn it off.

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