

### DESCRIPTION

The EV1497S-J-00A demonstrates MPS's MP1497S, a high-frequency, synchronous, rectified, step-down converter with built-in high-side and low-side power MOSFETs. The MP1497S 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 MP1497S 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 MP1497S is available in a space saving 8-pin TSOT23 package.

### ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	$V_{IN}$	4.5 – 16	V
Output Voltage	$V_{OUT}$	3.3	V
Output Current	$I_{OUT}$	3	A

### FEATURES

- Wide 4.5V to 16V Operating Input Range
- 120mΩ/50mΩ Low  $R_{DS(ON)}$  Internal Power MOSFET
- Proprietary Switching-Loss-Reduction Technique
- High-Efficiency Synchronous Mode Operation
- Default 500kHz 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

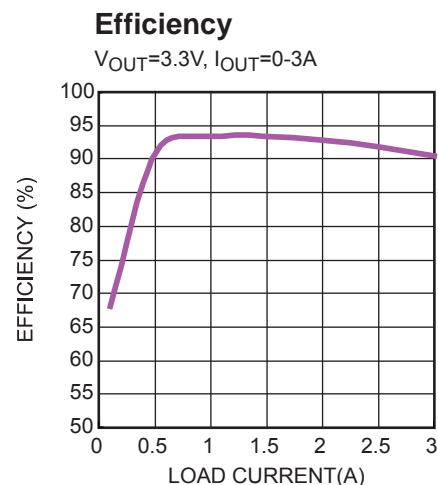
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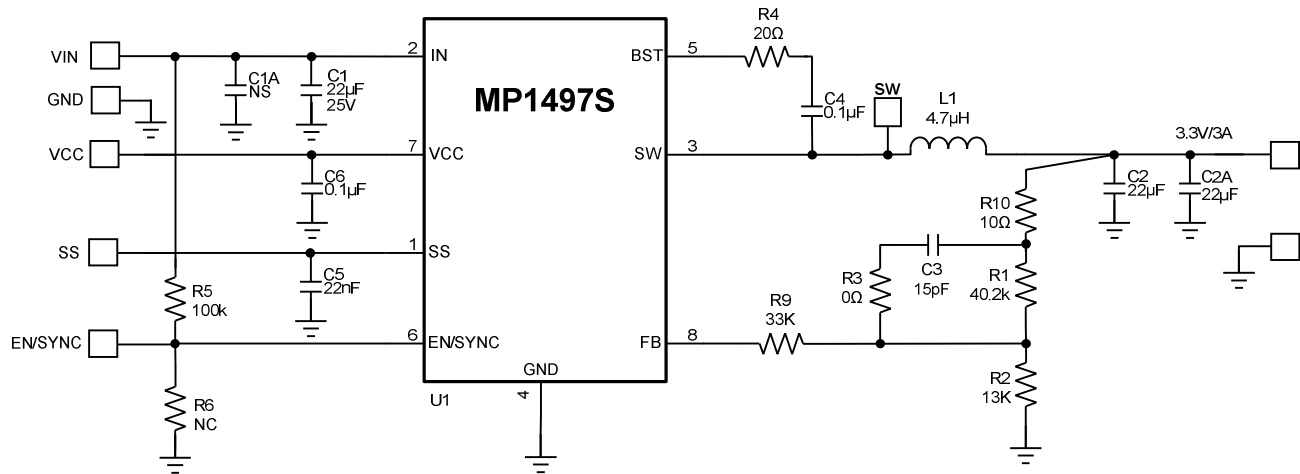
## EV1497S-J-00A EVALUATION BOARD



Board Number	MPS IC Number
EV1497S-J-00A	MP1497SGJ



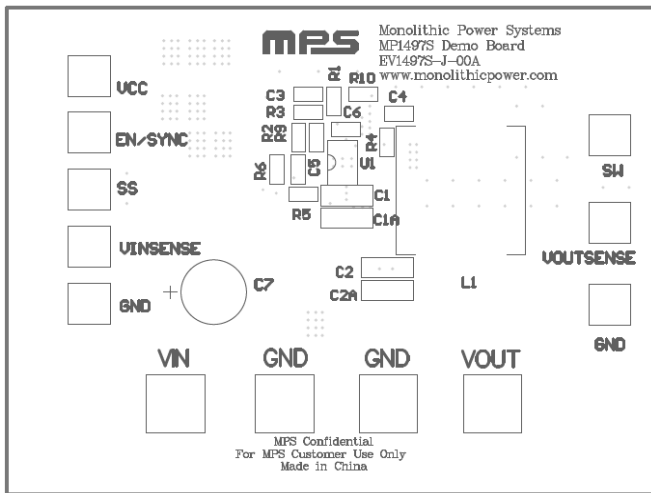
## EVALUATION BOARD SCHEMATIC



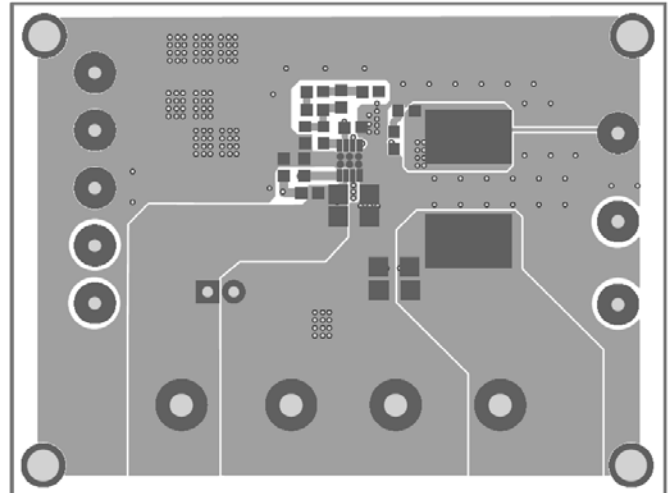
## EV1497S-J-00A BILL OF MATERIALS

Qty	RefDes	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	22μF	Ceramic Cap., 25V, X5R	1206	muRata	GRM31CR61E226KE15L
2	C1A, C7	NS				
2	C2, C2A	22μF	Ceramic Cap., 10V, X7R	1206	muRata	GRM31CR70A226KE19L
1	C3	15pF	Ceramic Cap., 50V, C0G	0603	muRata	GRM1885C1H150JA01D
2	C4, C6	0.1μF	Ceramic Cap., 16V, X7R	0603	muRata	GRM188R71C104KA01D
1	C5	22nF	Ceramic Cap., 50V, X7R	0603	muRata	GRM188R71H223KA10D
1	R1	40.2kΩ	Thick Film Res., 1%	0603	Yageo	9C06031A4022FKHFT
1	R2	13kΩ	Thick Film Res., 1%	0603	Yageo	9C06031A1302FKHFT
1	R3	0Ω	Thick Film Res., 1%	0603	Yageo	9C06031A0R00JLHFT
1	R4	20Ω	Thick Film Res., 5%	0603	Yageo	9C06031A20R0JLHFT
1	R5	100K	Film Res, 1%	0603	ROYAL	RL0603FR-07100KL
1	R6	NC				
1	R9	33kΩ	Thick Film Res., 1%	0603	Yageo	9C06031A3302FKHFT
1	R10	10Ω	Thick Film Res., 5%	0603	Yageo	9C06031A10R0JLHFT
1	L1	4.7μH	Inductor, DCR=11mΩ, Is=6.8A	SMD	Würth	744771004
1	U1	MP1497S	Synchronous Step-Down Convert	TSOT23-8	MPS	MP1497SGJ

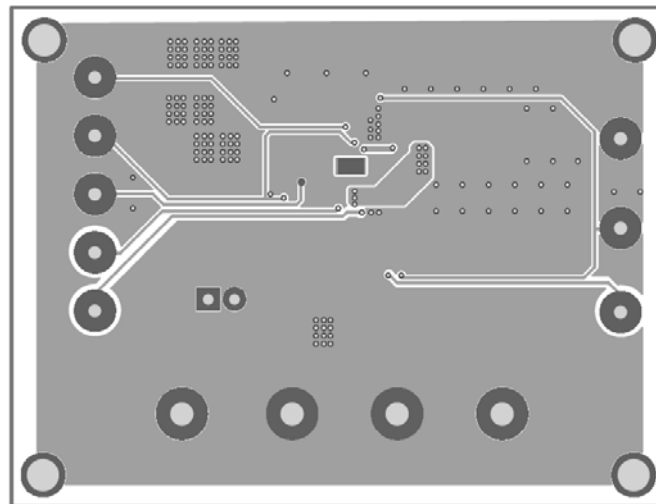
**PRINTED CIRCUIT BOARD LAYOUT**



**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 4.5V 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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