

DESCRIPTION

The EV8666DN-00A is an evaluation board for the MP8666, a 600kHz step-down regulator.

An integrated 45mΩ power MOSFETS provides 6A continuous load current over a wide operating input voltage of 4.5V to 21V.

Current mode control provides fast transient response and eases loop stabilization.

This device, available in an 8-pin SOIC provides a very compact system solution with minimal reliance on external components.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V _{IN}	4.5 – 21	V
Output Voltage	V _{OUT}	3.3	V
Output Current	I _{OUT}	6	A

FEATURES

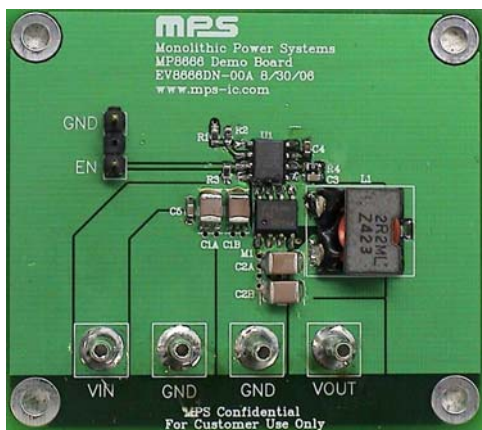
- 6A Output Current
- Wide 4.5V to 21V Operating Input Range
- Synchronizable to > 1MHz External Clock
- Adjustable Output from 0.8V to 15V
- Fully Assembled and Tested

APPLICATIONS

- Digital Set-top Box
- Personal Video Recorders
- Broadband Communications
- Flat Panel Television and Monitors
- Distributed Power Systems

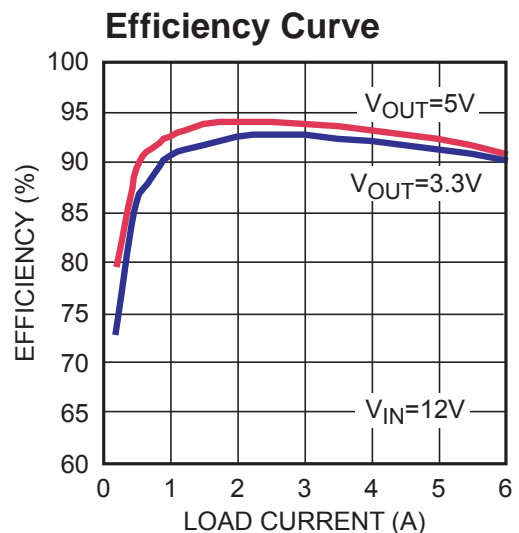
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EV8666DN-00A EVALUATION BOARD

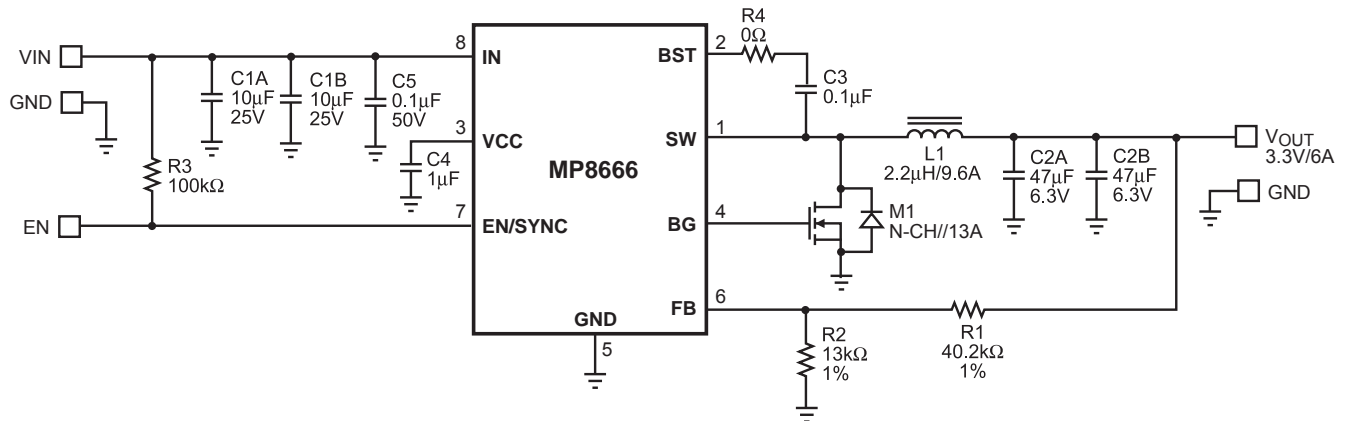


(L x W x H) 2.2" x 2.3" x 0.5"
(5.6cm x 5.0cm x 1.2cm)

Board Number	MPS IC Number
EV8666DN-00A	MP8666DN



EVALUATION BOARD SCHEMATIC



EV8666DN-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
2	C1A, C1B	10μF	Ceramic Cap., 25V, X7R	1210	TDK	C3225X7R1E106M
2	C2A, C2B	47μF	Ceramic Cap., 6.3V, X5R	1210	TDK	C3225X5R0J476M
2	C3, C5	0.1μF	Ceramic Cap., 50V, X7R	603	TDK	C1608X7R1H104K
1	C4	1μF	Ceramic Cap., 16V, X7R	603	TDK	C1608X7R1C105K
1	C5	0.1μF	Ceramic Cap., 50V, X7R	805	TDK	ERJ-3EKF4022V
1	R1	40.2kΩ	Film Res., 1%	603	Panasonic	ERJ-3EKF4022V
1	R2	13kΩ	Film Res., 1%	603	Panasonic	ERJ-3EKF1302V
1	R3	100kΩ	Film Res., 5%	603	Panasonic	ERJ-3GEYJ104V
1	R4	0	Film Res., 5%	603	Panasonic	ERJ-3GEY0R00V
	L1	2.2μH	Inductor, 9.6A	SMD	Sumida	CDEP105-2R2
1	M1		MOSFET, N-CH, 30V, 13A	SO-8	Fairchild	FDS6670AS
1	U1		Step-Down Converter	SO-8	MPS	MP8666DN

PRINTED CIRCUIT BOARD LAYOUT

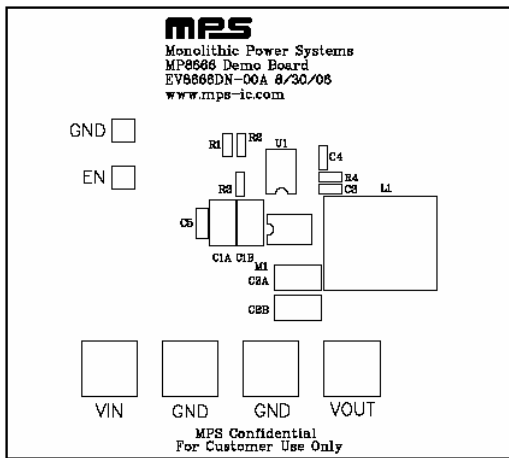


Figure 1—Top Silk Layer

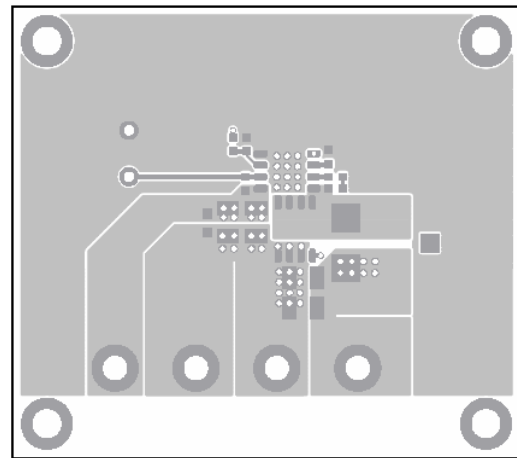


Figure 2—Top Layer

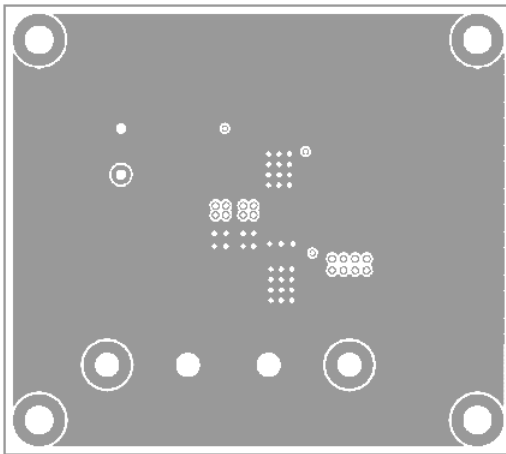


Figure 3—Inner Layer 1

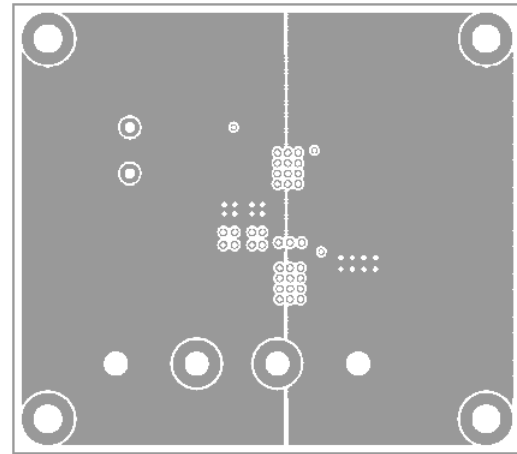


Figure 4—Inner Layer 2

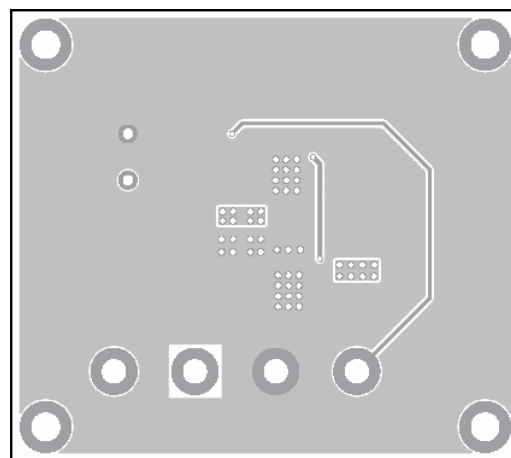


Figure 5—Bottom Layer

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 to between 4.5V and 21V, 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 startup.
5. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 1.2V to turn on the regulator or less than 0.4V to turn it off.
6. Apply up to 1MHz frequency logic level clock signal to the EN pin to synchronize the device to an external clock. The duty cycle is not critical.

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