



The Future of Analog IC Technology®

# EV8756-D-00A

## 26V, 6A High Current, Low I<sub>Q</sub> Synchronous Buck Converter

### DESCRIPTION

The EV8756-D-00A is used for demonstrating the performance of MP8756, a fully-integrated, high efficiency, synchronous step-down switch mode converter. MP8756 provides up to 6A continuous output current over a wide input supply range with constant-on-time control for fast loop response.

This part requires minimum number of external components and is available in QFN12 (2mmx3mm) package

### ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	V <sub>IN</sub>	12	V
Output Voltage	V <sub>OUT</sub>	1	V
Output Current	I <sub>OUT</sub>	6	A
Switching Frequency	f <sub>sw</sub>	700	kHz

### FEATURES

- Wide 4.5V to 26V Operating Input Range
- Ultrasonic Mode
- 117µA low quiescent Current
- 6A Continuous Output Current
- Adaptive COT for Fast transient
- DC Auto Tune Loop
- Internal Soft Start
- Output Discharge
- 700kHz Switching Frequency
- OCP, OVP, UVP (Hiccup) Protection and Thermal Shutdown.
- Output Adjustable from 0.6V
- QFN-12 (2mm x 3mm) Package

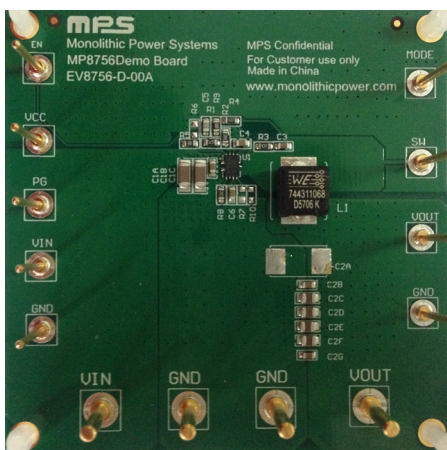
### APPLICATIONS

- Laptop Computer
- Tablet PC
- Networking Systems
- Personal Video Recorders
- 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.

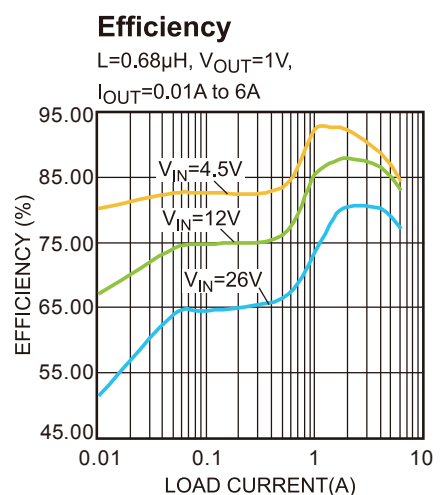
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### EV8756-D-00A EVALUATION BOARD

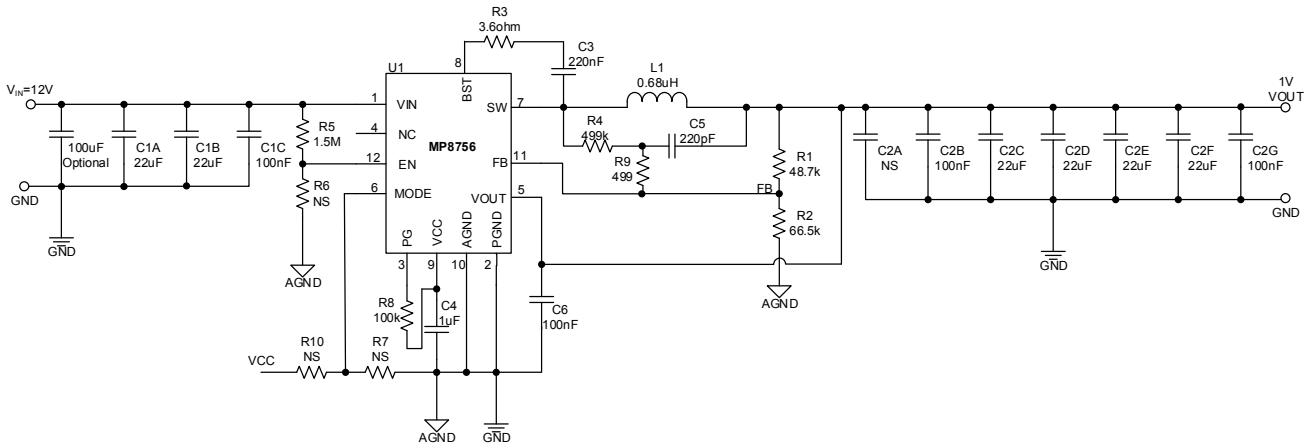


(L × W × H) 8.55cm × 8.55cm × 1.6cm

Board Number	MPS IC Number
EV8756-D-00A	MP8756GD



## EVALUATION BOARD SCHEMATIC



### Note:

EN resistor divider value should be modified accordingly with different input voltage. Please refer to UVLO protection section on MP8756 datasheet for details.

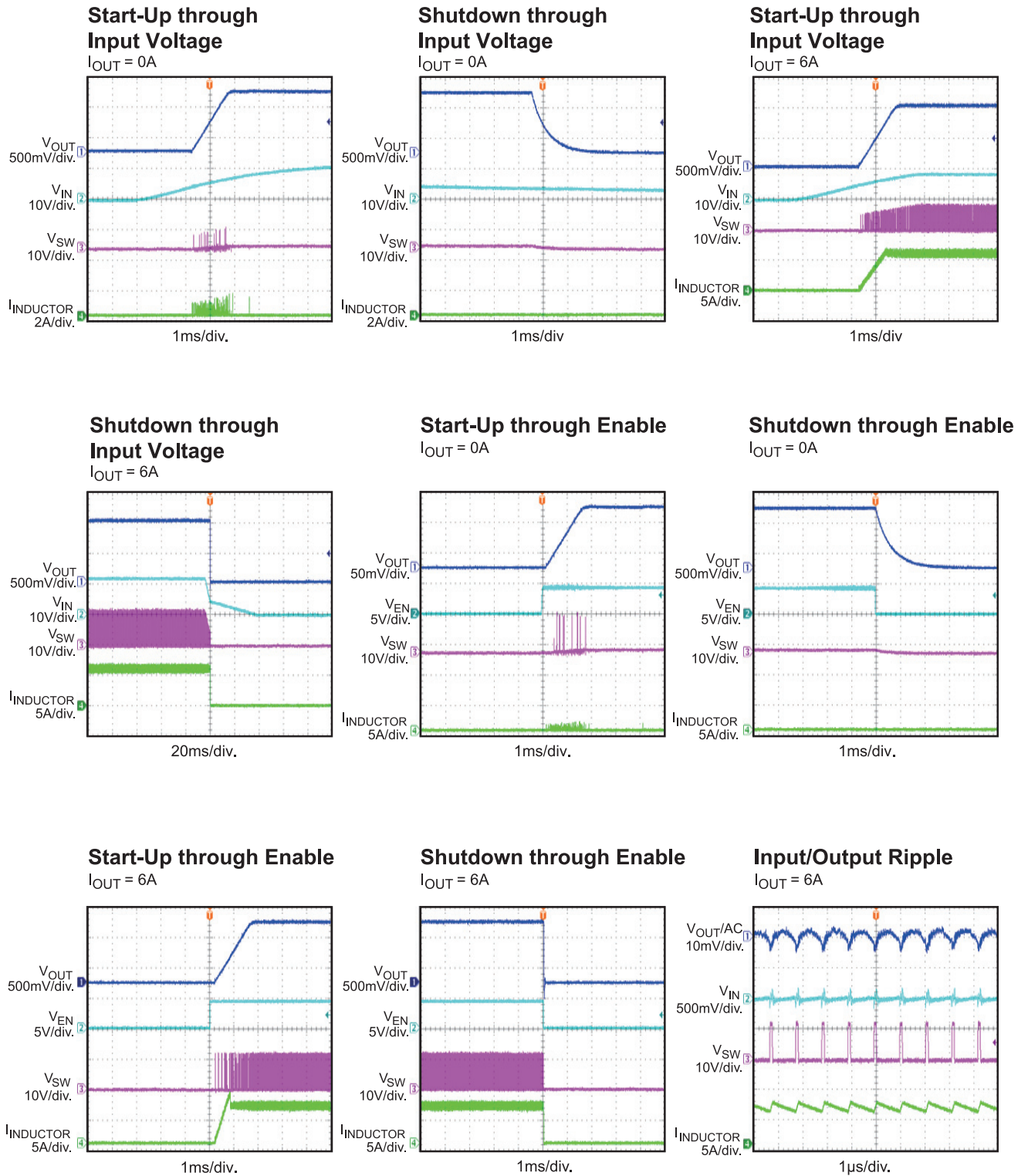
## EV8756-D-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1A,C1B	22µF	Ceramic Cap., 35V, X5R	1206	TDK	C3216X5R1V226M
4	C1C,C2B, C2G,C6	0.1Mf	Ceramic Cap., 50V, X7R	0603	TDK	C1608X7R1H104K
0	C2A	NS				
4	C2C,C2D, C2E,C2F	22µF	Ceramic Cap., 6.3V, X5R	0805	TDK	C2012X5R0J226M
1	C3	0.22µF	Ceramic Cap., 25V, X7R	0603	TDK	C1068X7R1E224K
1	C4	1µF	Ceramic Cap., 16V, X5R	0603	TDK	C1608X5R1C105K
1	C5	220pF	Ceramic Cap., 50V, C0G	0603	TDK	C1608C0G1H221J
1	R1	48.7k	Film Res., 1%	0603	ROYAL	RC0603FR-0748K7L
1	R2	66.5k	Film Res., 1%	0603	ROYAL	RC0603FR-0766K5L
1	R3	3.6Ω	Film Res., 1%	0603	ROYAL	RL0603FR-073R6L
1	R4	499k	Film Res., 1%	0603	ROYAL	RL0603FR-07499KL
1	R5	1.5M	Film Res., 1%	0603	ROYAL	RL0603FR-071M5L
1	R8	100k	Film Res., 1%	0603	ROYAL	RL0603FR-07100KL
1	R9	499Ω	Film Res., 1%	0603	ROYAL	RL0603FR-07499RL
0	R6,R7,R10	NS				
1	L1	0.68µH	Inductor, DRC=3.1mΩ, I <sub>s</sub> =20A	SMD	Würth	744311068
1	U1	MP8756	Step-Down Converter	QFN-12 2mm×3mm	MPS	MP8756GD

## EVB TEST RESULTS

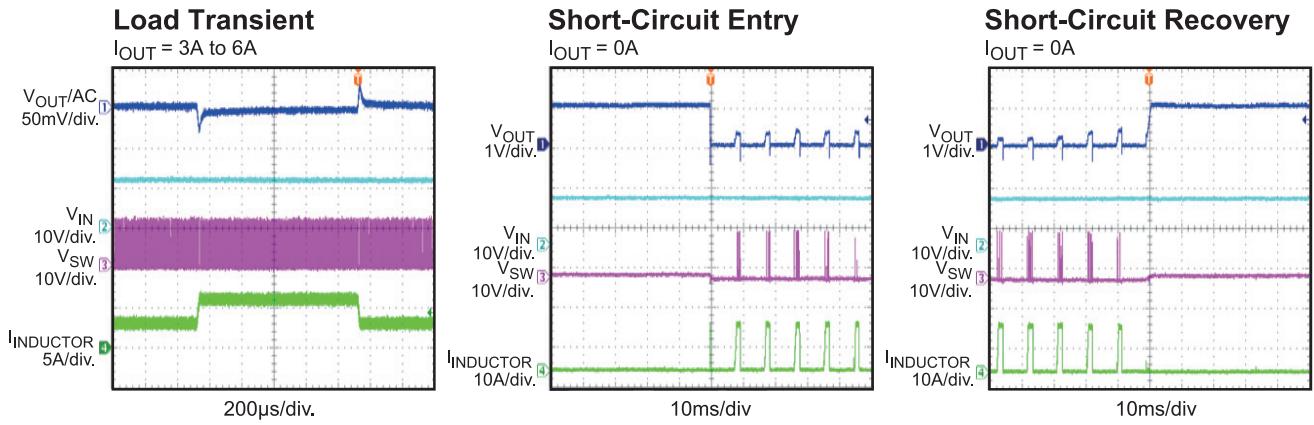
Performance waveforms are tested on the EV8756-D-00A.

V<sub>IN</sub> = 12V, V<sub>OUT</sub> = 1V, L = 0.68μH, T<sub>J</sub> = +25°C, unless otherwise noted.



**EVB TEST RESULTS (continued)**

Performance waveforms are tested on the EV8756-D-00A.

 $V_{IN} = 12V$ ,  $V_{OUT} = 1V$ ,  $L = 0.68\mu H$ ,  $T_J = +25^\circ C$ , unless otherwise noted.


PRINTED CIRCUIT BOARD LAYOUT

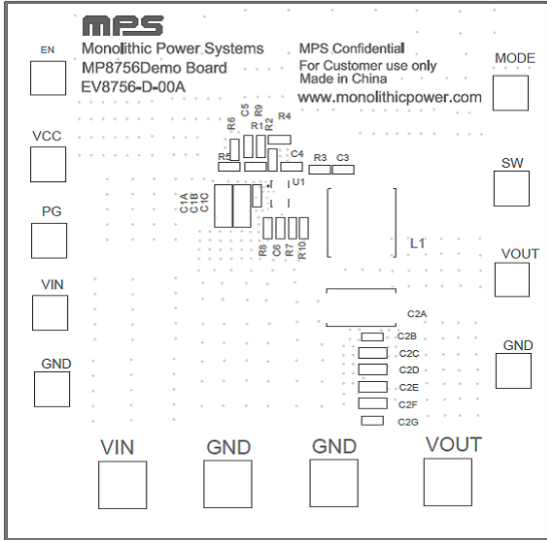


Figure 1: Top Silk Layer

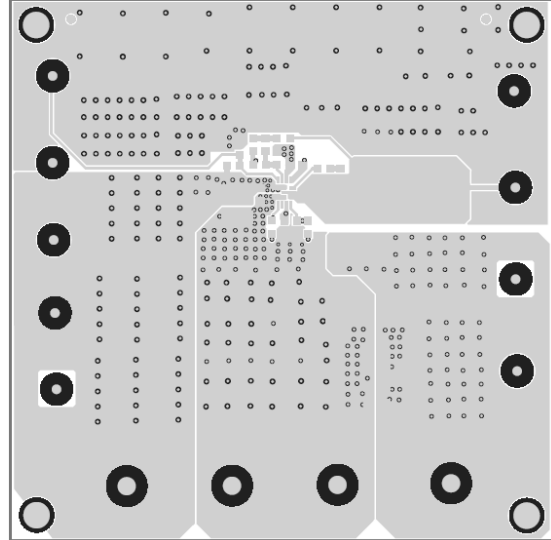


Figure 2: Top Layer

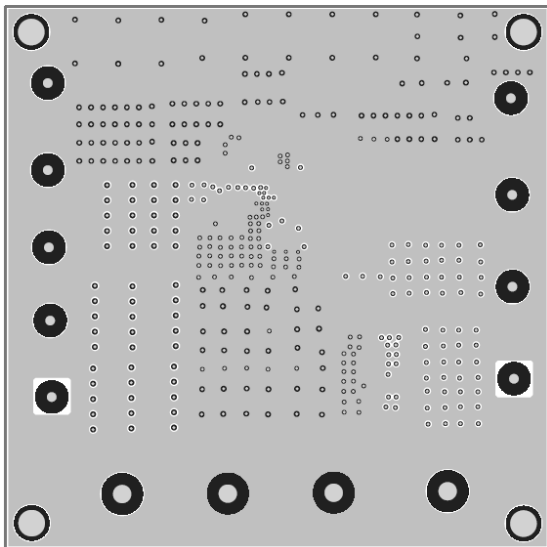


Figure 3: Inner Layer1

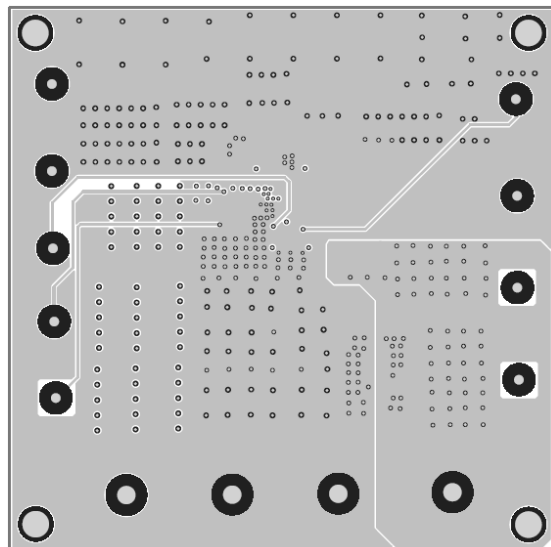
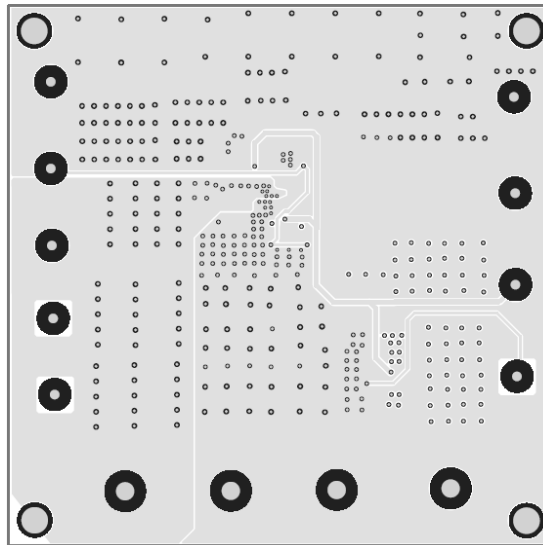


Figure 4: Inner Layer2



**Figure 5: Bottom Layer**