

### DESCRIPTION

The EV2229-Q-00A is the evaluation board for MP2229, a high-frequency synchronous rectified step-down switch mode converter with internal power MOSFETs. It offers a very compact solution to achieve 6A continuous output current over a wide input supply range with excellent load and line regulation. The MP2229 has synchronous mode operation for higher efficiency over the output current load range.

Current mode operation provides fast transient response and eases loop stabilization. Full protection features include over-current protection and thermal shutdown.

The MP2229 requires a minimal number of readily-available standard external components and is available in a space saving 3mm x 3mm 14-pin QFN package.

### ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	$V_{IN}$	4.5-21	V
Output Voltage	$V_{OUT}$	1	V
Output Current	$I_{OUT}$	6	A

### FEATURES

- Wide 4.5V to 21V Operating Input Range
- 6A Output Current
- Low  $40m\Omega/18m\Omega$   $R_{DS(ON)}$  of Internal Power MOSFETs
- Programmable Switching Frequency
- Frequency SYNC from 300kHz to 2MHz External Clock
- Low Power Mode Selectable by External Signal
- External Soft Start
- Pre-Bias Startup
- OCP with Hiccup Mode
- Thermal Shutdown
- Output Adjustable from 0.6V
- Available in QFN-14 (3mmx3mm) Package

### APPLICATIONS

- DSL Modems
- Cable Modems
- Set -Top Boxes
- Telecom
- Distributed Power Systems

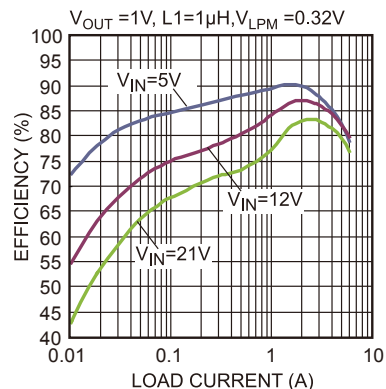
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## EV2229-Q-00A EVALUATION BOARD



Board Number	MPS IC Number
EV2229-Q-00A	MP2229GQ

### Efficiency vs. Load Current





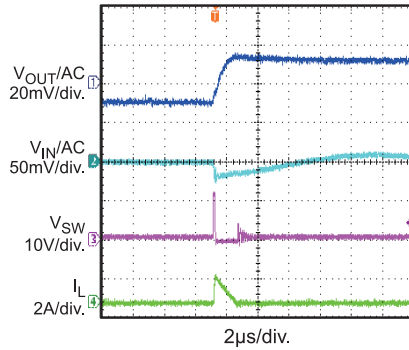
## EVB TEST RESULTS

Performance waveforms are tested on the evaluation board.

$V_{IN} = 12V$ ,  $V_{OUT} = 1V$ ,  $L = 1\mu H$ ,  $F_s = 500kHz$ ,  $T_A = 25^\circ C$ , unless otherwise noted.

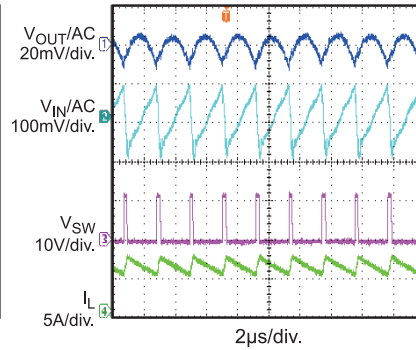
**Input/Output Ripple**

$I_{OUT} = 0A$



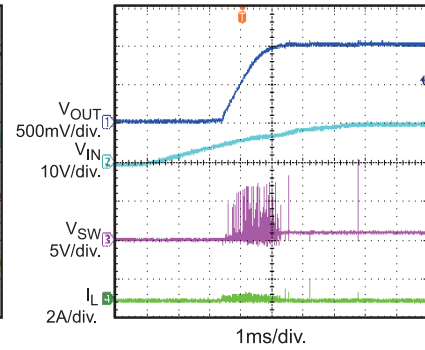
**Input/Output Ripple**

$I_{OUT} = 6A$



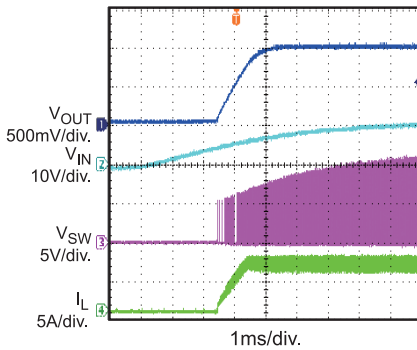
**Startup Through Input Voltage**

$I_{OUT} = 0A$



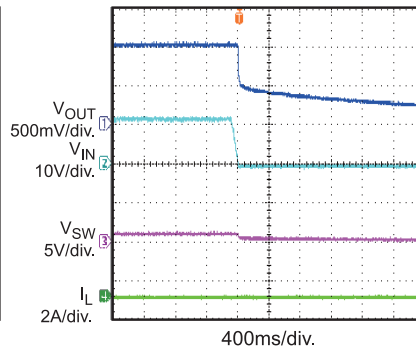
**Startup Through Input Voltage**

$I_{OUT} = 6A$



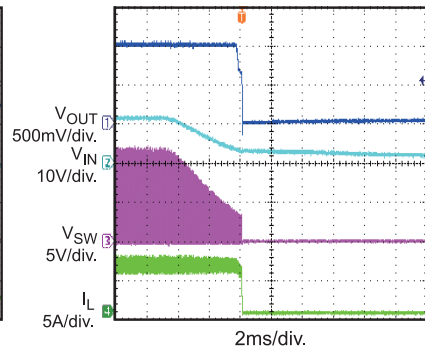
**Shutdown Through Input Voltage**

$I_{OUT} = 0A$



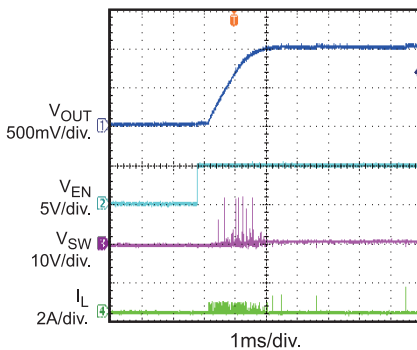
**Shutdown Through Input Voltage**

$I_{OUT} = 6A$



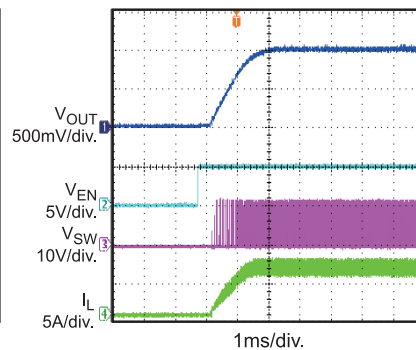
**Startup Through Enable**

$I_{OUT} = 0A$



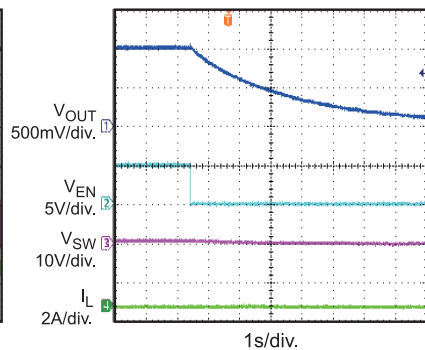
**Startup Through Enable**

$I_{OUT} = 6A$



**Shutdown Through Enable**

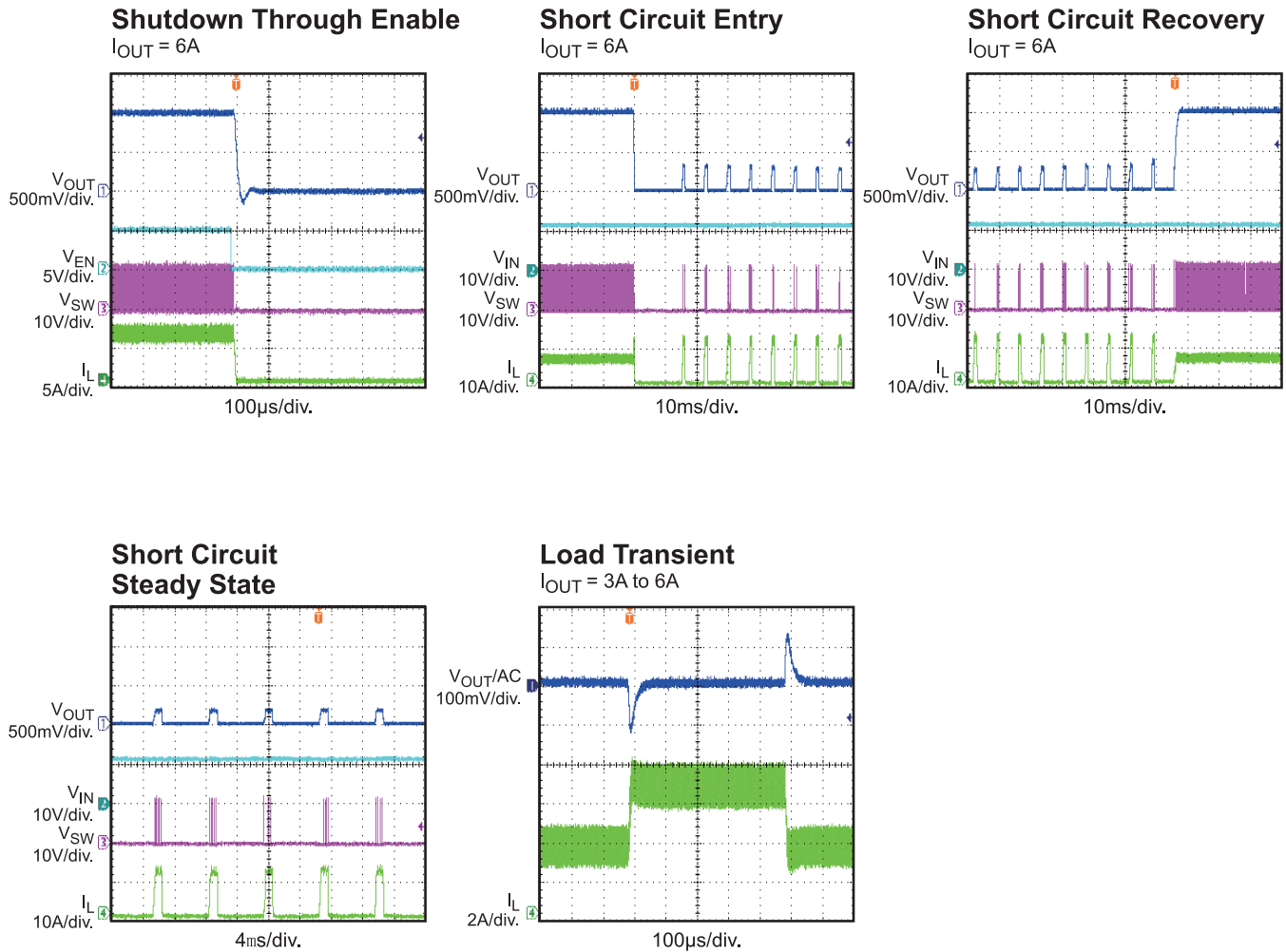
$I_{OUT} = 0A$



## EVB TEST RESULTS *(continued)*

Performance waveforms are tested on the evaluation board.

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## PRINTED CIRCUIT BOARD LAYOUT

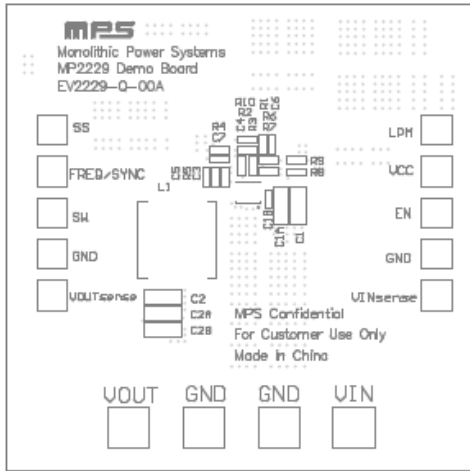


Figure 1—Top Silk Layer

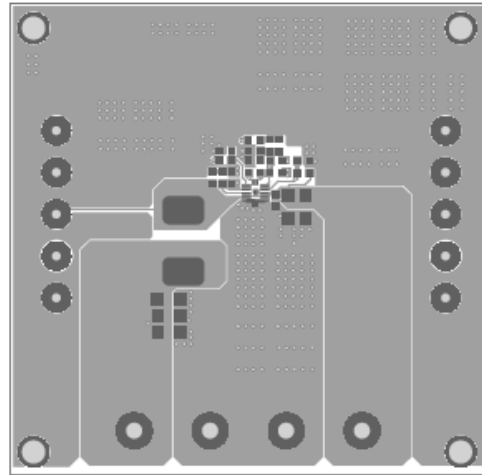


Figure 2—Top Layer

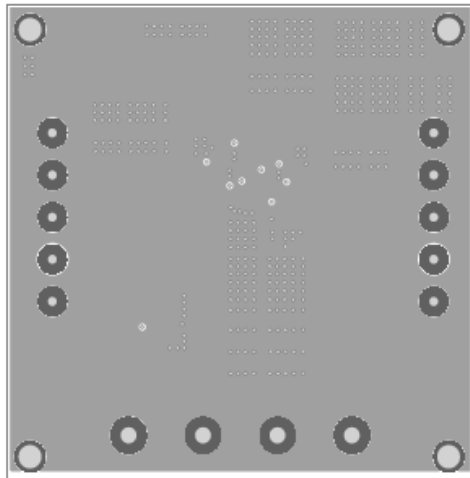


Figure 3—Inner1 Layer

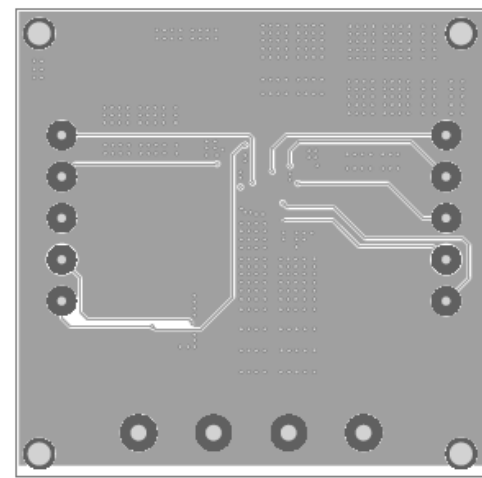


Figure 4—Inner2 Layer

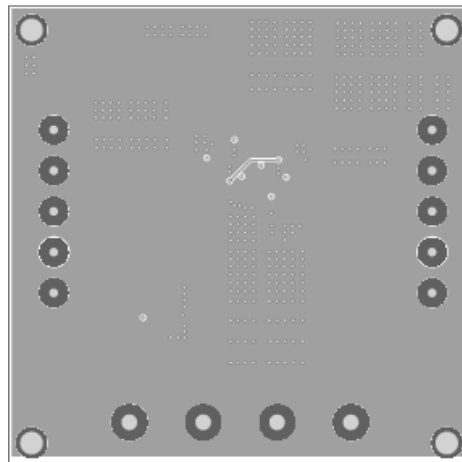


Figure 5— Bottom Layer