



The Future of Analog IC Technology®

EV6901DS-00A

High Efficiency Synchronous Rectification EV Board

DESCRIPTION

The EV6901DS-00A is an evaluation board for the MP6901DS. It is configured to provide synchronous rectification solution for Flyback/LLC topology.

MP6901DS features a synchronous gate output which enables high efficiency rectification by relating the schottky rectifier with a low Ron MOSFET.

ELECTRICAL SPECIFICATIONS

| Parameter | Symbol | Value | Units |
|----------------|-----------------|-------|-------|
| Supply voltage | V _{DD} | 8-24 | V |

FEATURES

- Works with both Standard and Logic Level FETS
- Compatible with Energy Star, 1W Standby Requirements
- V_{DD} Range From 8V to 24V
- Fast Turn-off Total Delay of 20ns
- Max 400kHz Switching Frequency
- <3mA Low Quiescent Current
- Supports CCM, DCM and Quasi-Resonant Topologies
- Supports High-side and Low-side Rectification
- Power Savings of Up to 1.5W in a Typical Notebook Adapter

APPLICATIONS

- Industrial Power Systems
- Distributed Power Systems
- Battery Powered Systems
- Flyback/LLC Converters

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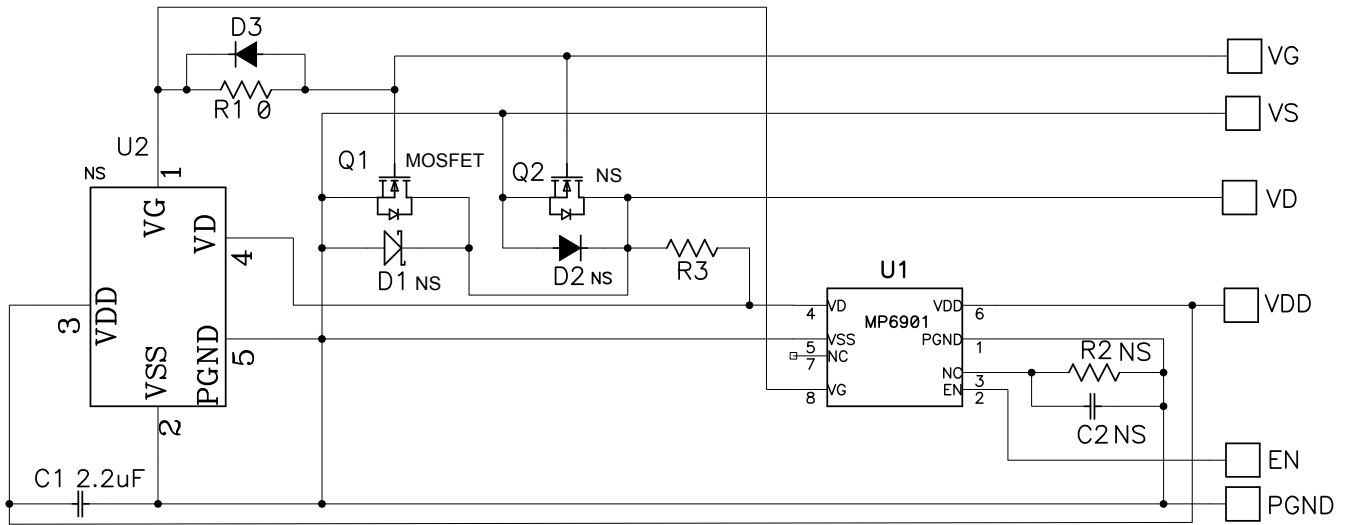
EV6901DS-00A EVALUATION BOARD



(L x W x H) 1.14" x 1.14" x 0.6"
2.9cm x 2.9cm x 1.4cm

| Board Number | MPS IC Number |
|--------------|---------------|
| EV6901DS-00A | MP6901DS |

EVALUATION BOARD SCHEMATIC



EV3908DK-00C BILL OF MATERIALS

| Qty | Ref | Value | Description | Package | Manufacturer | Manufacturer P/N |
|-----|-------|----------|----------------------|--------------|--------------|--------------------|
| 1 | C1 | 2.2uF | Ceramic Cap. 25V X7R | 0805 | muRata | GRM21BR71E225KA73L |
| 2 | C2 | NS | | 0603 | | |
| 2 | R1,R3 | 0 | Film Res, 5% | 0603 | Yageo | RC0603JR-070RL |
| 1 | R2 | NS | | 0603 | | |
| 1 | Q1 | SUP90N10 | N-CH, 100V, 9mΩ | TO220 | Vishay | SUP90N10-8M8P |
| 1 | Q2 | NS | | PowerPAK-SO8 | | |
| 1 | D1,D2 | NS | | | | |
| 1 | D3 | 1N4148 | | | | |
| 1 | U1 | MP6901DS | MP6901DS | SO-8 | MPS | MP6901DS |
| 1 | U2 | NS | | SOT23-5 | | |

PRINTED CIRCUIT BOARD LAYOUT

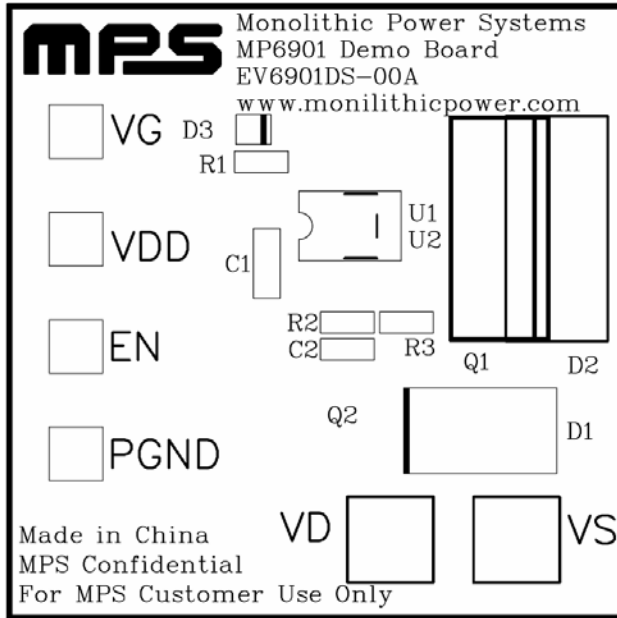


Figure 1—Top Silk Layer

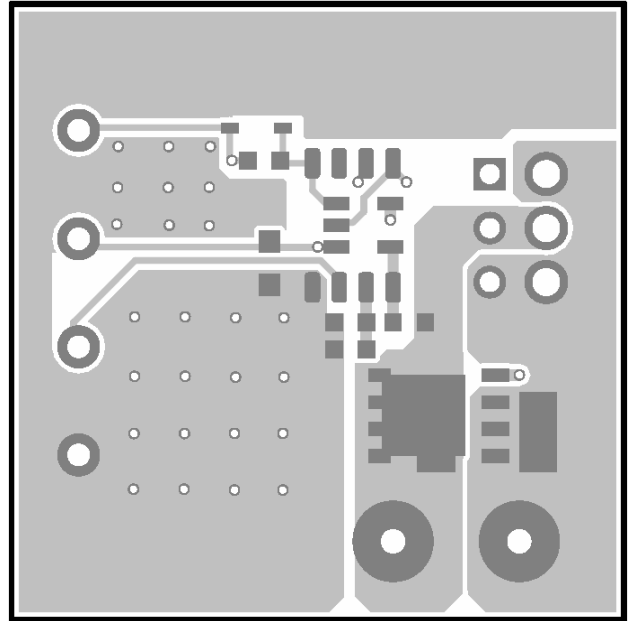


Figure 2—Top Layer

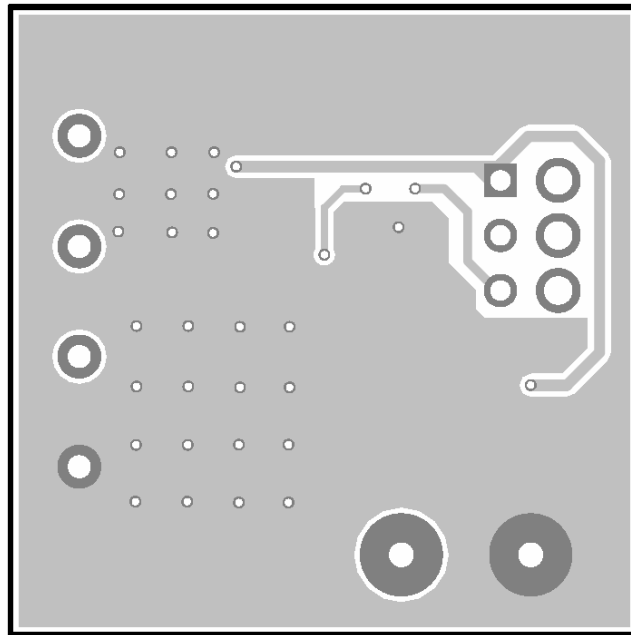


Figure 3—Bottom Layer

QUICK START GUIDE

1. Connect the positive and negative terminals of the power supply to the VDD and PGND pins, respectively.
2. Preset the power supply output 8V~24V, then turn off the power supply.
3. Connect the Drain and Source and Gate terminals of the synchronous power MOSFET to the VD and VS and VG pins, respectively (There is already a 100V power MOSFET Q1 connected on the board, if the customer do not want to use this MOS as synchronous MOSFET, you can remove this Q1 and use your own MOSFET instead).
4. Turn the power supply on. The IC will automatically startup and drive the synchronous MOSFET Q1 to work as an ideal diode.

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