

DESCRIPTION

The EV6924-S-00A is an evaluation board for the MP6924GS or MP6924AGS. It is configured to provide synchronous rectification solution for LLC topology.

MP6924GS features dual synchronous gate outputs which enables high efficiency rectification by replacing the schottky rectifier with a low Ron MOSFET.

ELECTRICAL SPECIFICATIONS

| Parameter | Symbol | Value | Units |
|-------------|-----------------|--------|-------|
| Vcc Voltage | V _{cc} | 4.2-35 | V |

FEATURES

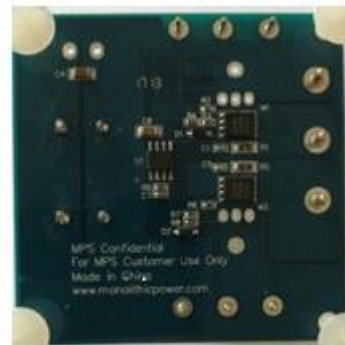
- Works with both Standard and Logic Level MOSFETs
- Compatible with Energy Star
- Fast Turn-Off Total Delay of 35ns
- Wide 4.2~35V V_{DD} Operating Range
- 175uA Low quiescent Current in Light-Load Mode
- Supports CCM, CrCM and DCM Operation Mode
- Supports High-side and Low-side Rectification
- Power Savings of Up to 1.5W in a Typical Notebook Adapter
- Available in a SOIC-8 Package

APPLICATIONS

- AC-DC Adapters
- PC Power Supplies
- LCD and LED TVs
- Isolated DC/DC Power Converters

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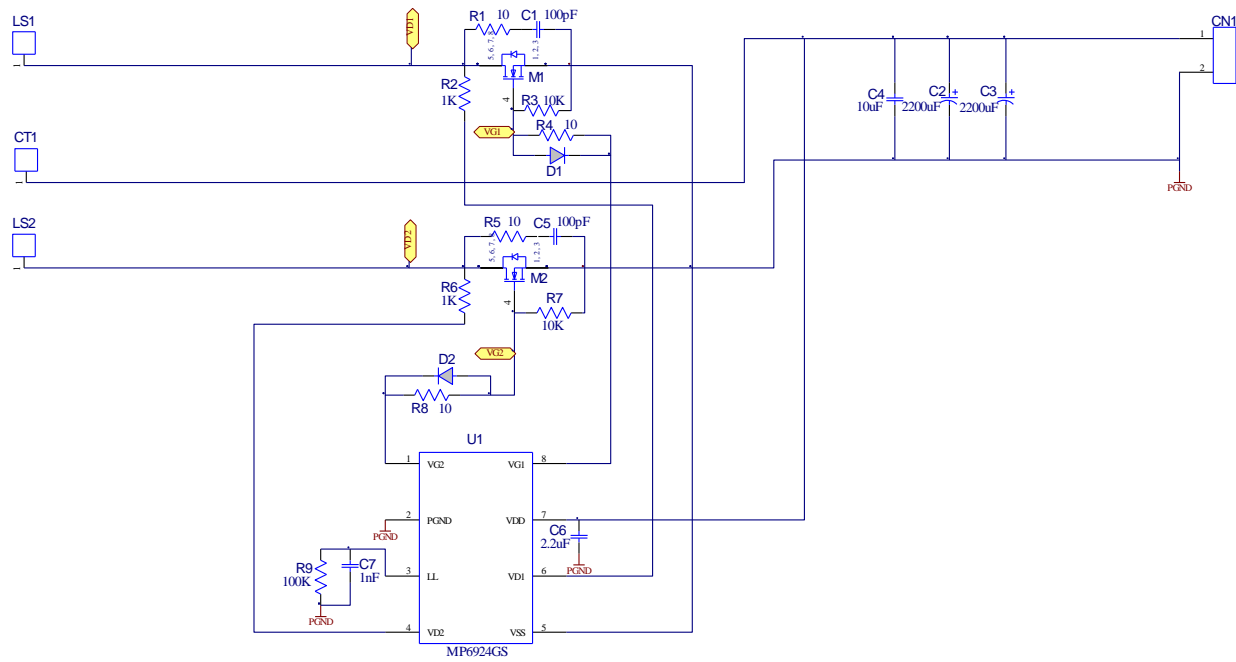
EV6924DS-00A EVALUATION BOARD



(L x W x H) 6.3cm x 6.3cm x 3cm

| Board Number | MPS IC Number |
|--------------|---------------|
| EV6924-S-00A | MP6924GS |

EVALUATION BOARD SCHEMATIC



EV6924DS-00A BILL OF MATERIALS

| Qty | Ref | Value | Description | Package | Manufacturer | Part Number |
|-----|-------------------------|--------|------------------------------|---------------|--------------|---------------------|
| 2 | C1, C5 | 100pF | Ceramic Capacitor, 100V, C0G | 0603 | TDK | C1608C0G2A101J |
| 2 | C2, C3 | 2200uF | Electrolytic Capacitor, 35V | DIP | Rubycon | 2200uF/35V Dia.16mm |
| 1 | C4 | 10uF | Ceramic Capacitor, 35V, X7R | 1206 | TDK | C3216X7R1V106K |
| 1 | C6 | 2.2uF | Ceramic Capacitor, 50V, X7R | 1206 | muRata | GRM31CR71H225KA88L |
| 1 | C7 | 1nF | Ceramic Capacitor, 50V, X7R | 0603 | muRata | GRM188R71H102KA01D |
| 2 | D1, D2 | | Diode;75V, 0.15A | SOD-123 | Diodes | 1N4148W |
| 2 | M1, M2 | NS | N Channel Mosfet, 60V | TO-220 | | |
| | | | N Channel Mosfet, 60V | PowerPAK SO-8 | Si7478DP | Si7478DP |
| 2 | R1, R5 | 10 | Film Resistor, 5% | 1206 | Yageo | RC1206JR-0710R |
| 2 | R2, R6 | 1k | Film Resistor, 5% | 0603 | Royalohm | 0603SAJ0102T5E |
| 2 | R3, R7 | 10k | Film Resistor, 5% | 0603 | Yageo | RC0603JR-0710KL |
| 2 | R4, R8 | 10 | Film Resistor, 5% | 0603 | Royalohm | 0603SAJ0100T5E |
| 1 | R9 | 100k | Film Resistor, 1% | 0603 | Yageo | RC0603FR-07100KL |
| 1 | U1 | | SR Controller | SO-8 | MPS | MP6924GS |
| 6 | VD1,VD2,VS1,VS2,VG1,VG2 | | 1.0mm 铜柱 | | | |
| 4 | | | 板子支柱 | | | |

PRINTED CIRCUIT BOARD LAYOUT

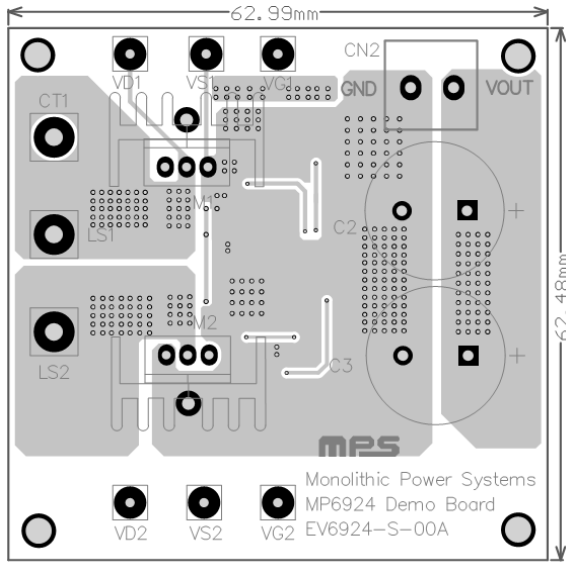


Figure 1—Top Layer

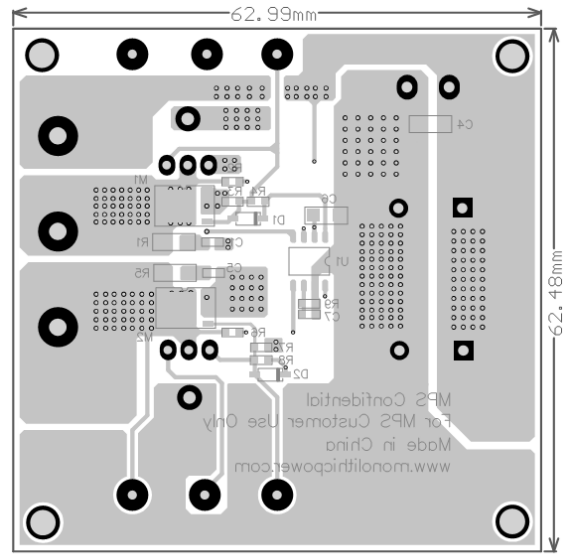


Figure 2—Bottom Layer

QUICK START GUIDE

The demo board is intended to implement the synchronous rectifier in an LLC resonant converter with center-tap secondary winding. If the converters implement diode rectification,

1. Remove the diodes rectifiers from the board as the Fig.3 shows.
2. Connect the center-tap and other two secondary windings of transformer as the Fig.4 shows.
3. Connect the Vout and GND pins on MP6924 demo board as the Fig. 4 shows.
4. Turn the power supply on. The IC will start up automatically.

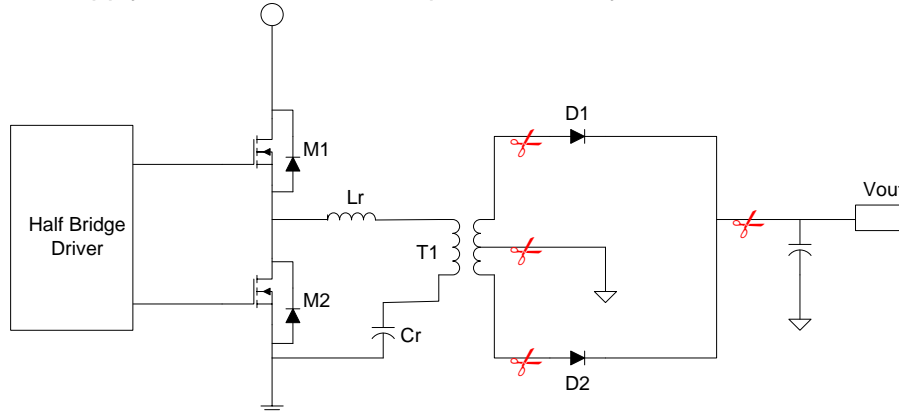


Figure 3—How to disconnect the diode rectifiers

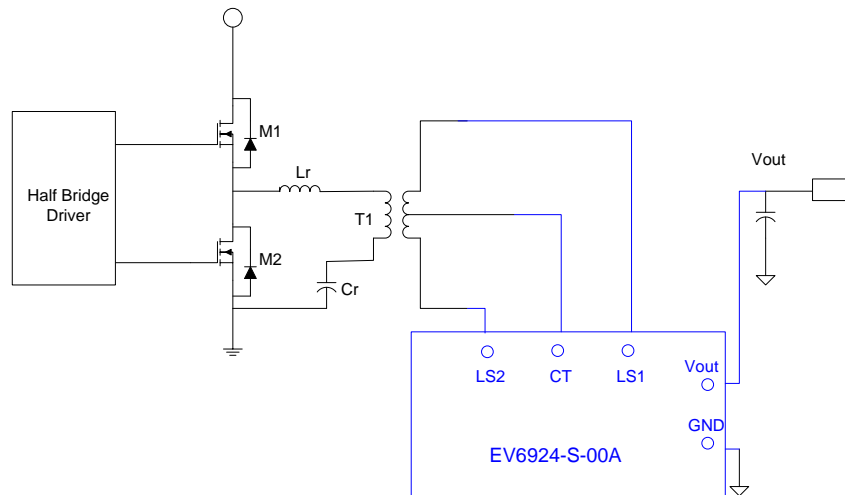


Figure 4—How to connect the EV6924-S-00A

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