



The Future of Analog IC Technology®

EV6923-S-00A

High Efficiency Synchronous Rectification EV Board

DESCRIPTION

The EV6923-S-00A is an evaluation board for the MP6923GS. It is configured to provide synchronous rectification solution for LLC topology.

MP6923 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}	8–24	V
Switching Frequency	F _{sw}	<300	kHz

FEATURES

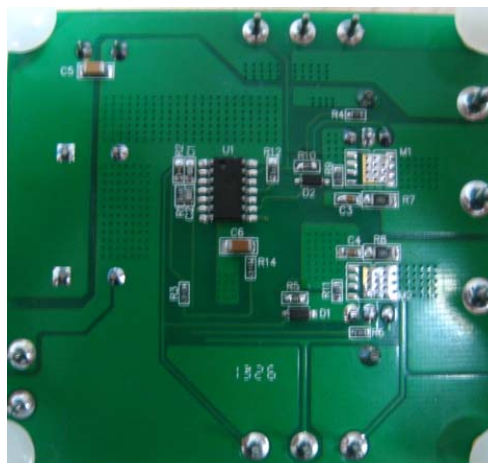
- Works with both Standard and Logic Level FETS
- Compatible with Energy Star, 1W Standby Requirements
- V_{DD} Range From 8V to 24V
- Fast Turn-off Total Delay of 20ns
- Max 300kHz Switching Frequency
- <600µA Quiescent Current at Light Load Mode
- Supports CCM, CrCM and DCM Operation Mode
- Supports High-side and Low-side Rectification

APPLICATIONS

- AC-DC Adapter
- LCD & PDP TV
- TeleCom SMPS

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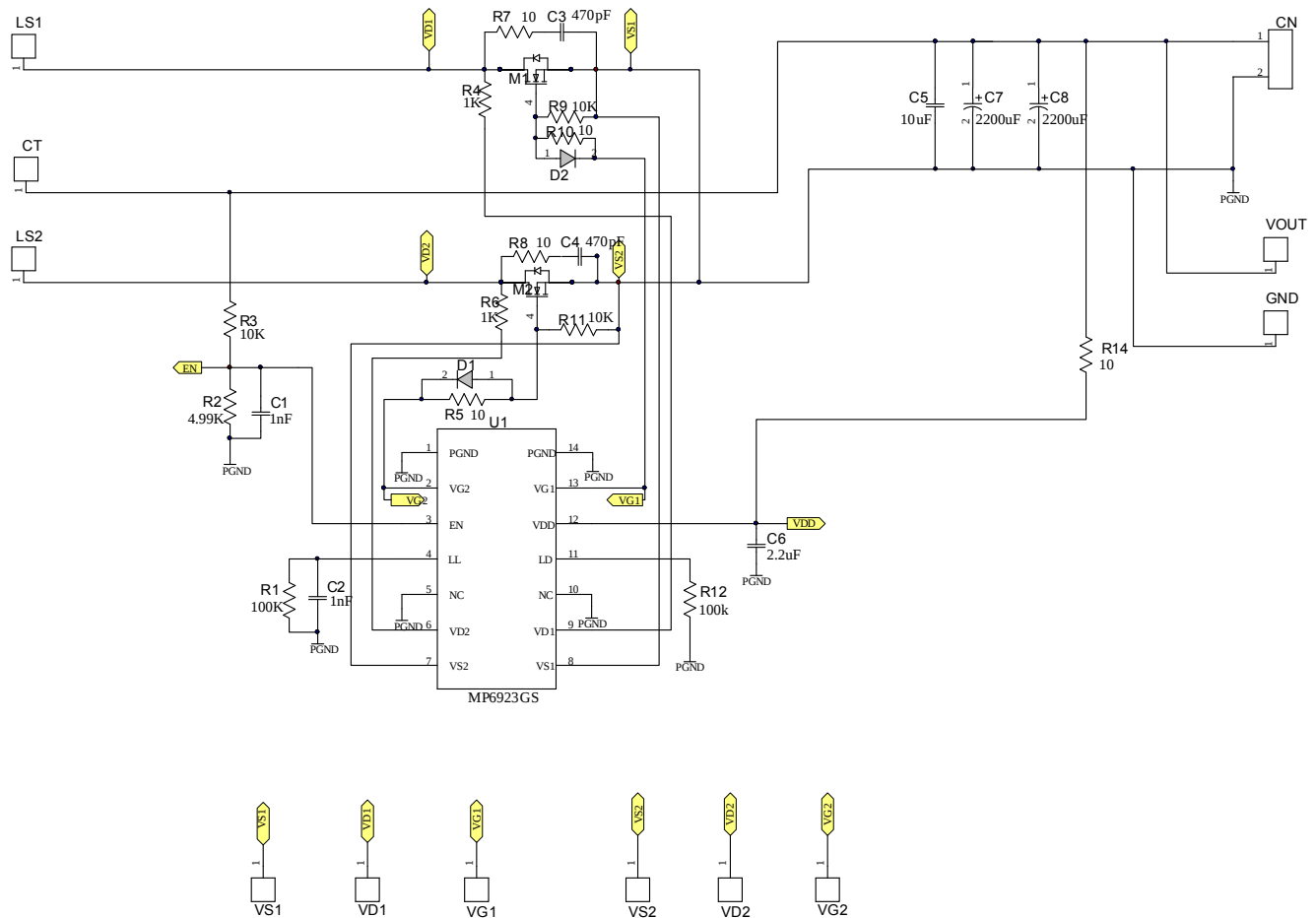
EV6922DS-00A EVALUATION BOARD



(L x W x H) 1.14" x 1.14" x 0.6"
7.1cm x 6.5cm x 2cm

Board Number	MPS IC Number
EV6923-S-00A	MP6923GS

EVALUATION BOARD SCHEMATIC



EV6922DS-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	1nF	Ceramic Capacitor, 50V, X7R	0603	muRata	GRM188R71H102KA01D
2	C3, C4	470pF	Ceramic Capacitor, 50V, X7R	0603	muRata	GRM188R71H471KA01D
1	C5	10 μ F	Ceramic Capacitor, 25V, X5R	1206	muRata	GRM31CR61E106KA12L
1	C6	2.2 μ F	Ceramic Capacitor, 25V, X7R	1206	TDK	C3216X7R1E225K
2	C7, C8	2200 μ F	Electrolytic Capacitor, 35V	DIP	Rubycon	2200 μ F/35V Dia.: 16mm Pin-pin:7.5mm
2	D1, D2		Diode;75V, 0.15A	SOD-123	Diodes	1N4148W
2	M1, M2		N Channel Mosfet, 60V	TO-220	AM90N06-10P	Analog Power
		NS	N Channel Mosfet, 60V	PowerPAK SOIC8		
1	R1, R12	100k	Film Resistor, 1%	0603	Yageo	RC0603FR-07100KL
1	R2	4.99k	Film Resistor, 1%	0603	Yageo	RC0603FR-074K99L
3	R3, R9, R11	10k	Film Resistor, 1%	0603	Yageo	RC0603FR-0710KL
2	R4, R6	1k	Film Resistor, 5%	0603	Royalohm	0603SAJ0102T5E
3	R5,R10, R14	10	Film Resistor, 5%	0603	Royalohm	0603SAJ0100T5E
2	R7, R8	10	Film Resistor, 5%	1206	Yageo	RC1206JR-0710R
1	U1		SR Controller	SOIC14	MPS	MP6923GS
2			M1, M2 Radiator			
2			M1, M2 Isolation Gasket			
2			M1, M2 Screw			
4			Board Stanchion			

PRINTED CIRCUIT BOARD LAYOUT

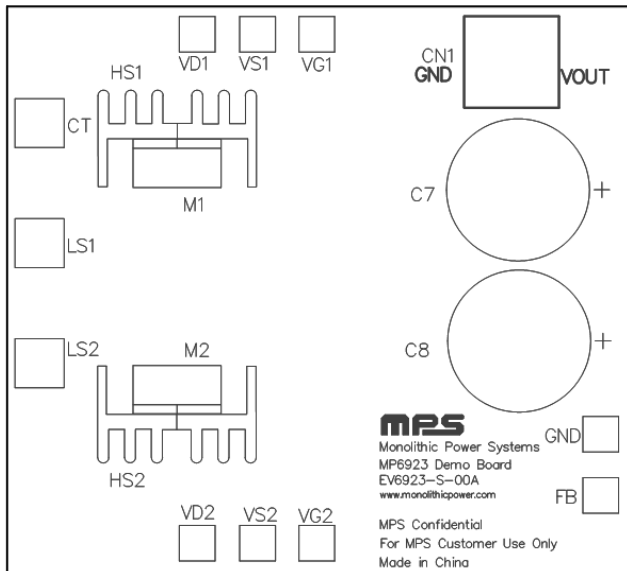


Figure 1—Top Silk Layer

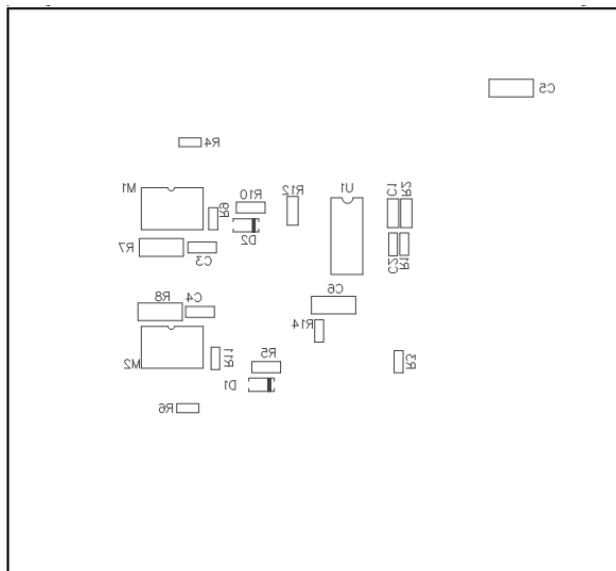


Figure 2—Bottom Silk Layer

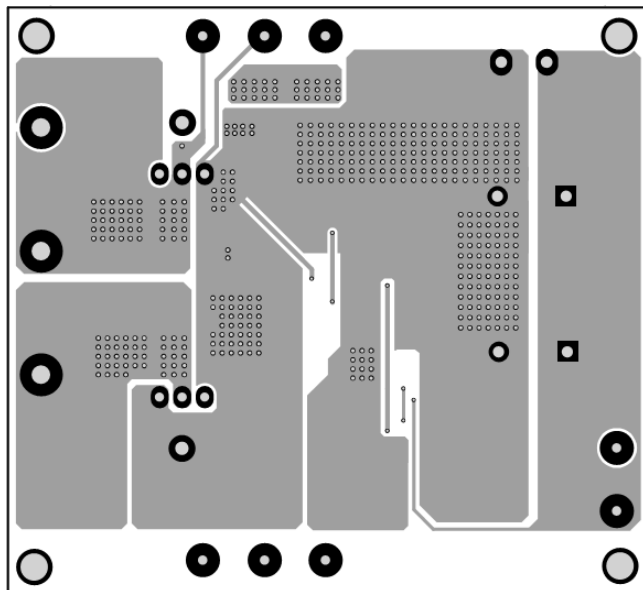


Figure 3—Top Layer

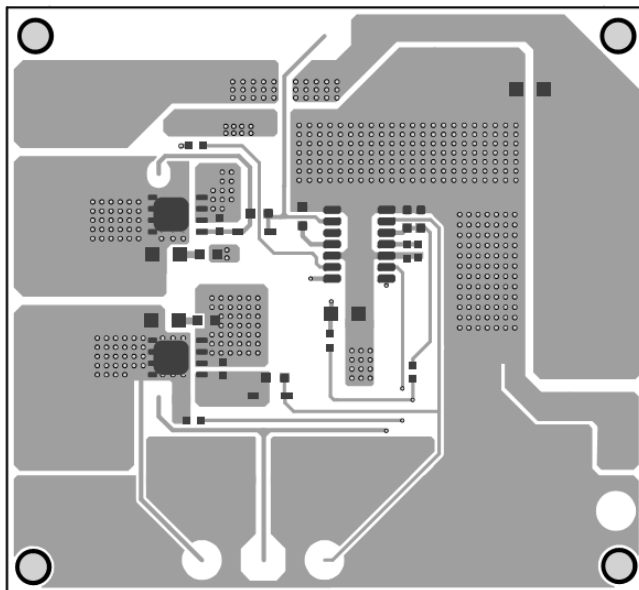


Figure 4—Bottom Layer

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.5 shows.
2. Connect the center-tap and other two secondary windings of transformer as the Fig.6 shows.
3. Connect the Vout and GND pins on MP6923GS demo board as the Fig. 6 shows.
4. Turn the power supply on. The IC will start up automatically.

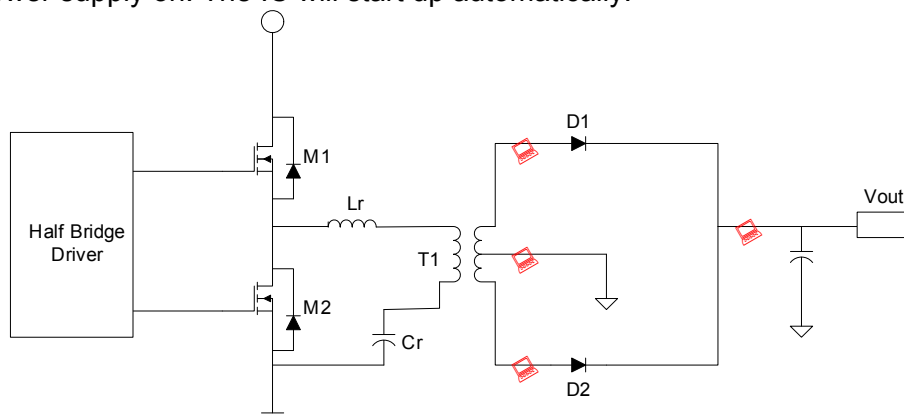


Figure 5—How to disconnect the diode rectifiers

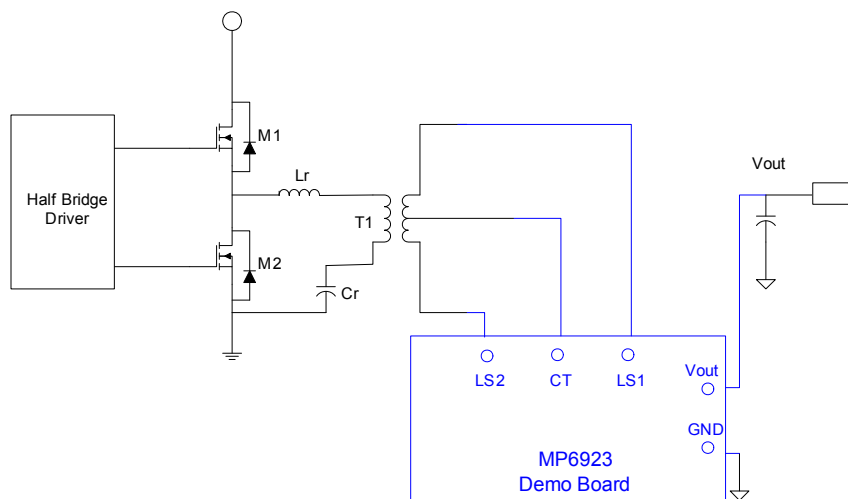


Figure 6—How to connect the EV6923-S-00A

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