

### DESCRIPTION

The MP9989 is a fast turn-off, intelligent rectifier for flyback converters that integrates a 100V MOSFET. It can replace a diode rectifier for higher efficiency and power density. The chip regulates the forward voltage drop of the internal power switch to 40mV and turns off before the drain-source voltage reverses.

The MP9989 can generate its own supply voltage without the need for auxiliary winding, which makes it suitable for charger applications with a low output voltage requirement or any other adaptor applications with high-side set-up. The internal ringing detection circuitry prevents the MP9989 from falsely turning on during discontinuous conduction mode (DCM) or quasi-resonant operations.

EV9989-V-00A is the evaluation board for MP9989.

### FEATURES

- Integrated 100V/10mΩ MOSFET
- Wide Output Range down to 0V
- No Need for Auxiliary Winding for High-Side or Low-Side Rectification
- Ringing Detection Prevents False Turn-On during DCM Operations
- Compatible with Energy Star
- Supports DCM, CCM, and Quasi-Resonant Operations

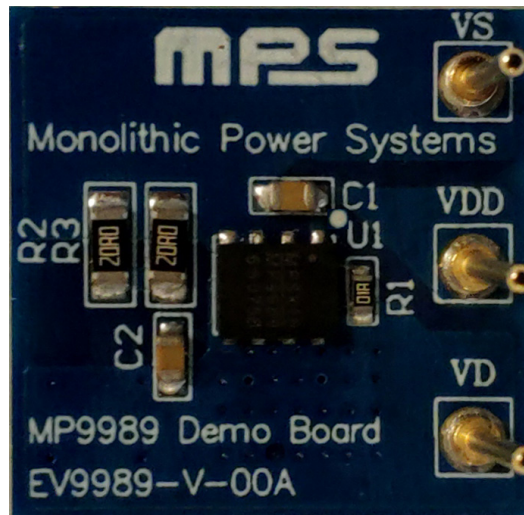
### APPLICATIONS

- Laptop Adapters
- QC and USB PD Charger
- High-Efficiency Flyback Converters

All MPS parts are lead-free, halogen free, and adhere to the RoHS directive. For MPS green status, please visit MPS website under Quality Assurance.

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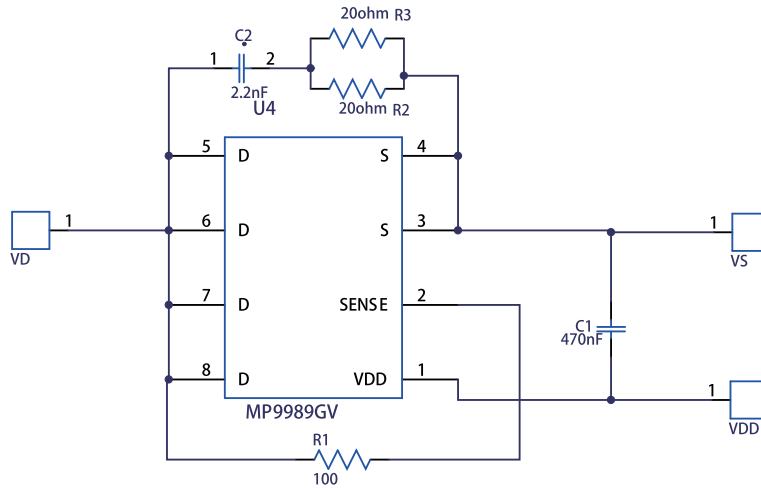
## EV9989-V-00A EVALUATION BOARD



(L x W) 2.2cm x2.2cm

Board Number	MPS IC Number
EV9989-V-00A	MP9989GV

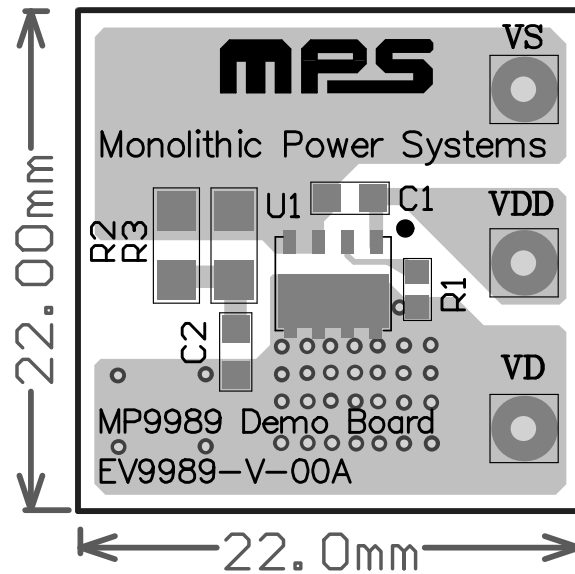
**EVALUATION BOARD SCHEMATIC**



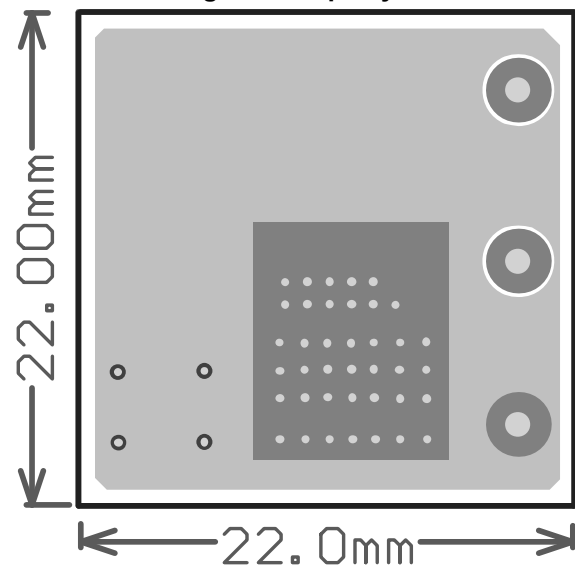
**BILL OF MATERIALS**

Qty	RefDes	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	470nF	Ceramic Capacitor; 25V;X7R	0805	Murata	GRM21BR71E474KA01L
1	C2	2.2nF	Ceramic Capacitor; 250V;X7R	0805	TDK	C2012X7R2E222K
1	R1	100	Film Resistor;1%	0603	Yageo	RC0603FR-07100RL
2	R2,R3	20	Film Resistor;1%	1206	Yageo	RC1206FR-0720RL
1	U1	MP9989GV	R7	QFN-8	MPS	R7
3	VS,VD, VDD	Connector	1.0mm			

**PRINTED CIRCUIT BOARD LAYOUT**



**Figure 1: Top Layer**



**Figure 2: Bottom Layer**