

### DESCRIPTION

The MP6919 is a fast turn-off, intelligent rectifier for flyback converters that integrates a 100V/13mΩ 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 MP6919 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 MP6919 from falsely turning on during discontinuous conduction mode (DCM) or quasi-resonant operations.

EV6919-S-00A is the evaluation board for MP6919.

### FEATURES

- Integrated 100V/13mΩ 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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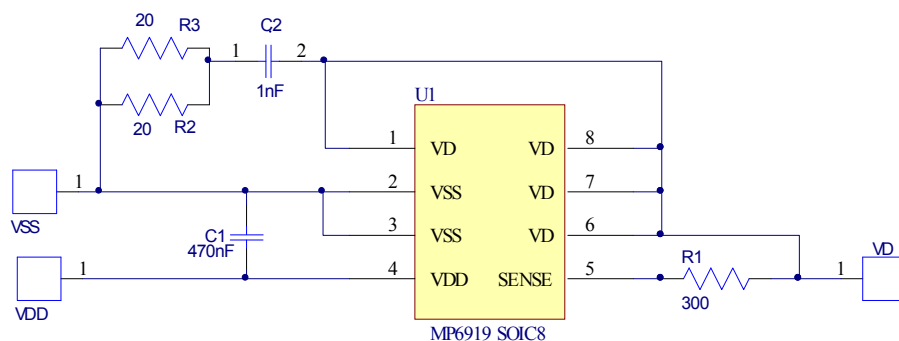
## EV6919-S-00A EVALUATION BOARD



(L x W) 2.2cm x2.2cm

| Board Number | MPS IC Number |
|--------------|---------------|
| EV6919-S-00A | MP6919GS      |

## EVALUATION BOARD SCHEMATIC



## BILL OF MATERIALS

| Qty | RefDes    | Value     | Description                | Package | Manufacturer | Manufacturer P/N   |
|-----|-----------|-----------|----------------------------|---------|--------------|--------------------|
| 1   | C1        | 470nF     | Ceramic Capacitor;50V;X7R  | 0805    | Murata       | GRM21BR71H474KA88  |
| 1   | C2        | 1nF       | Ceramic Capacitor;250V;X7R | 0805    | TDK          | GRM21AR72E102KW01D |
| 1   | R1        | 300       | Film Resistor;1%           | 0603    | Yageo        | RC0603FR-07300RL   |
| 2   | R2,R3     | 20        | Film Resistor;1%           | 1206    | Yageo        | RC1206FR-0720RL    |
| 1   | U4        | MP6919GS  | R7                         | SOIC-8  | MPS          | R7                 |
| 3   | VS,VD,VDD | Connector | 1.0mm                      |         |              |                    |

## PRINTED CIRCUIT BOARD LAYOUT

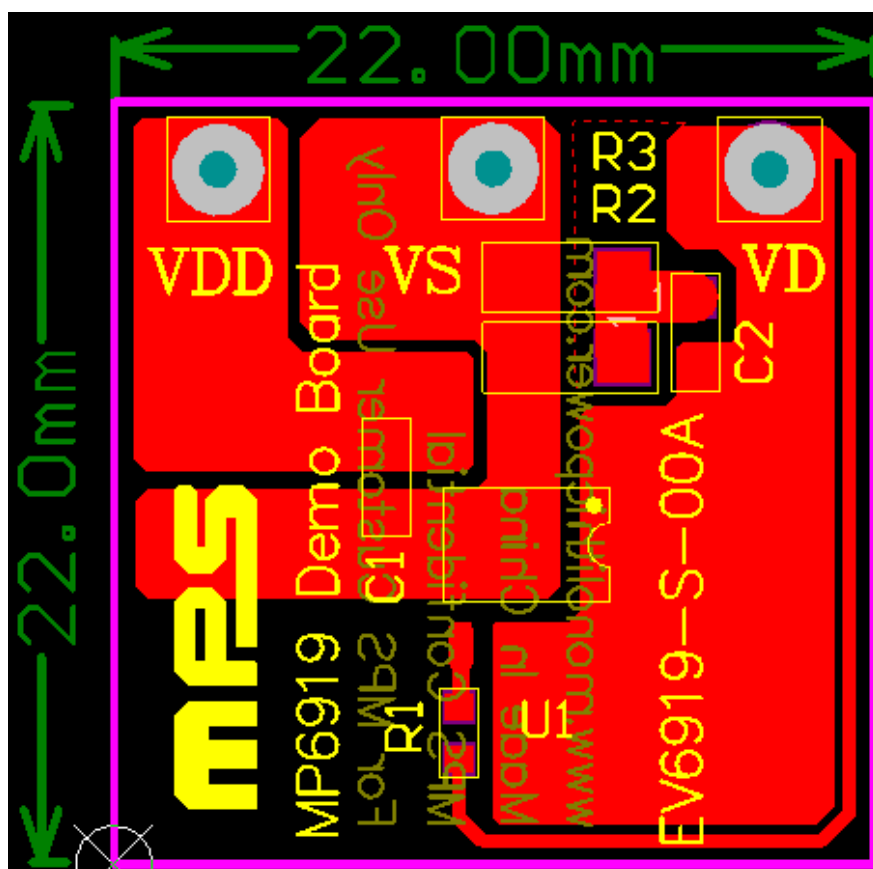


Figure 1: Top Layer

## QUICK START GUIDE

1. Connect the VS and VD pin into the flyback circuit to replace the freewheel diode.
2. Turn the power supply on. The IC will start up and work as a freewheel diode automatically.

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