

Content

1. Description
2. Power and Ground Planes
3. Basic Test Setup and Connections

1. Description

The SLG59M1735C is a 10.5 mΩ, ~ 4 A single-channel load switch that is able to switch 0.9 V to 5.5 V power rails. The product is packaged in an ultra-small 0.96 x 1.56 mm package.

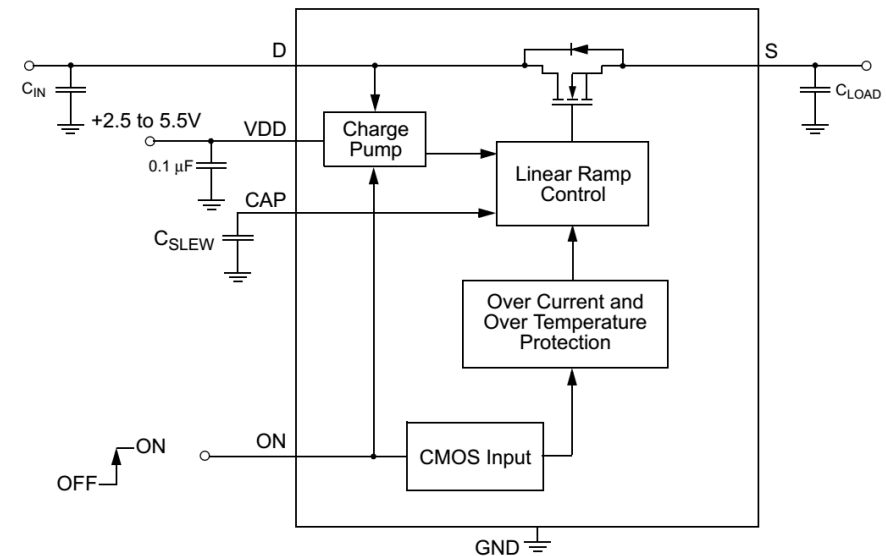


Figure 1: SLG59M1735C Block Diagram

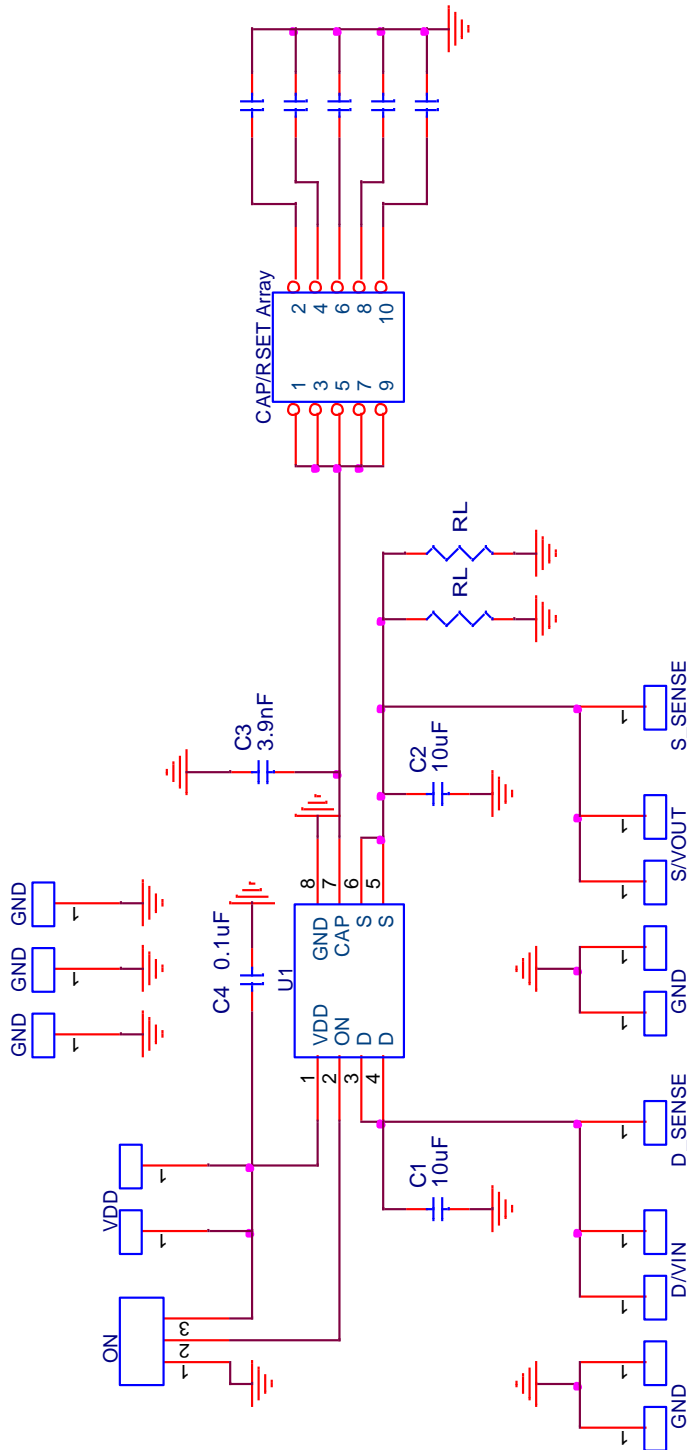


Figure 5. SLG59M1735C Connection Circuit for Evaluation board #11

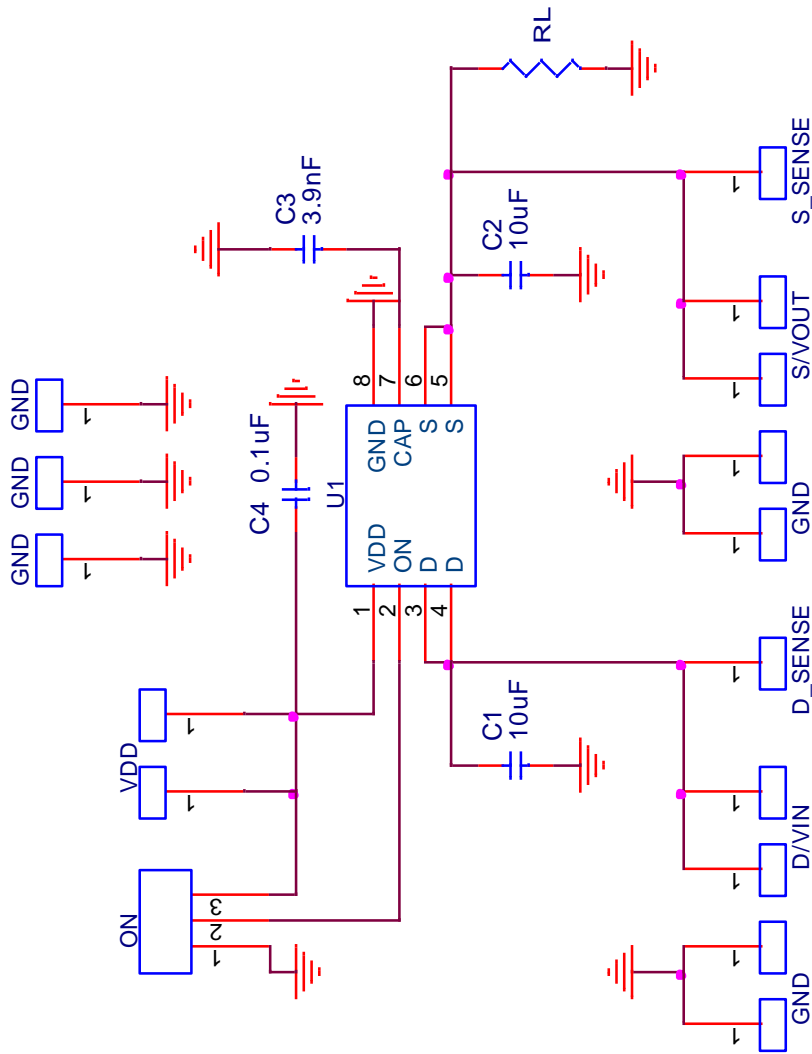


Figure 6. SLG59M1735C Connection Circuit for Evaluation board #11v2

2. Power and Ground Planes

- 2.1. The VDD pin (A1) needs a 0.1uF external capacitors to smooth pulses from the power supply. Locate this capacitor as close to A1.
- 2.2. The trace length from the control IC to the ON pin should be as short as possible and must avoid crossing this trace with power rails.
- 2.3. The D/VIN and S/VOUT pins carry significant current. Please note how the D/VIN and S/VOUT pads are placed directly on the power planes in Figure 3, which minimizes the $R_{DS_{ON}}$ associated with long, narrow traces. The D/VIN, S/VOUT and GND pins dissipate most of the heat generated during high-load current condition. The layout shown in Figure 3 and Figure 4 is illustrating a proper solution for heat to transfer as efficiently as possible out of the device.
- 2.4. Place the power rail ramp capacitor as close as possible to the CAP pin (B2) to avoid/reduce the effect of parasitic mount capacitance.
- 2.5. The GND pin (A2) should be connected to GND.

This layout guide provides some important information about the PCB layout of SLG59M1735C applications.

WLCSP 0.96x1.56-8L PKG

Unit: μm

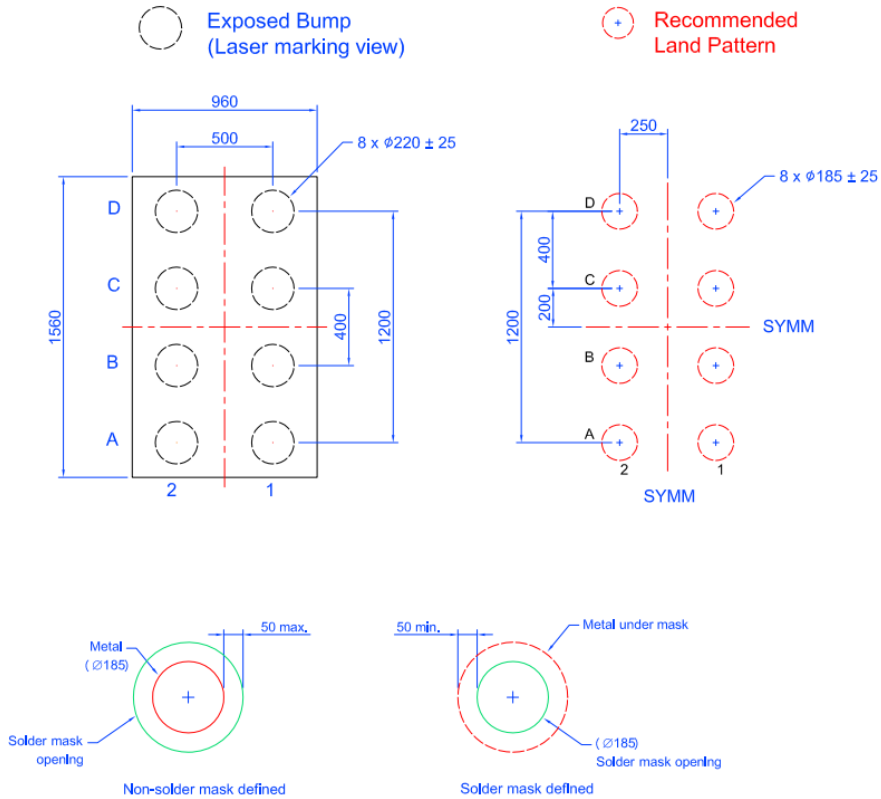


Figure 2. SLG59M1735C Package Dimensions and Recommended Land Pattern

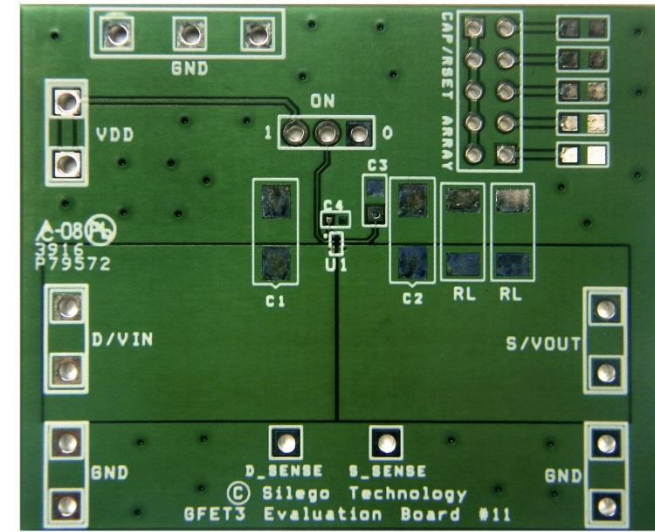


Figure 3. SLG59M1735C Evaluation Test Board

Note: Evaluation board has D_Sense and S_Sense pads. Please use them only for RDS(ON) evaluation.

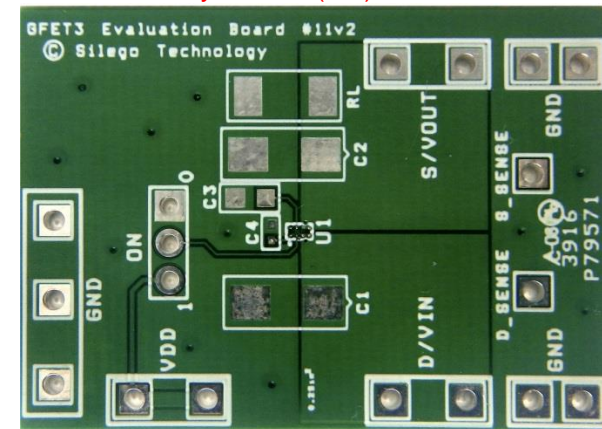


Figure 4. SLG59M1735C Evaluation Test Board

Note: Evaluation board has D_Sense and S_Sense pads. Please use them only for RDS(ON) evaluation.

3. Basic Test Setup and Connections

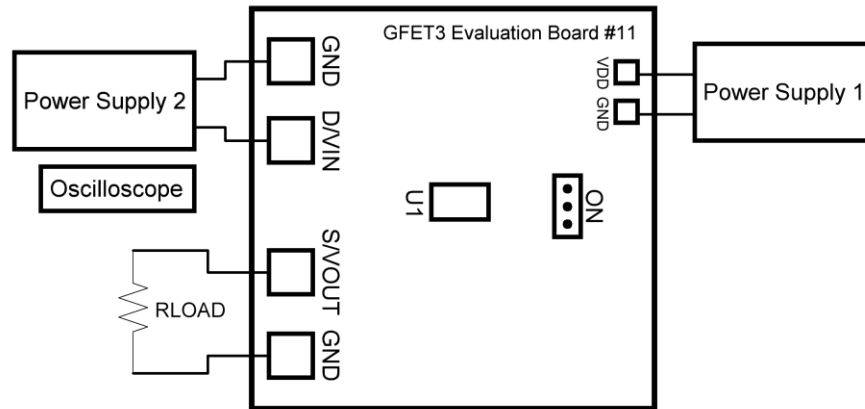


Figure 7. Typical connections for GFET3 Evaluation

3.1 EVB Configuration

1. Connect oscilloscope probes to D/VIN, S/VOUT, ON, etc.
2. Turn ON Power Supply 1 and set desirable V_{DD} in range of 2.5V...5.5V
3. Turn ON Power Supply 2 and set desirable V_{IN} in range of 0.9V... V_{DD}
4. Switch ON to High or Low to evaluate GFET3 operation