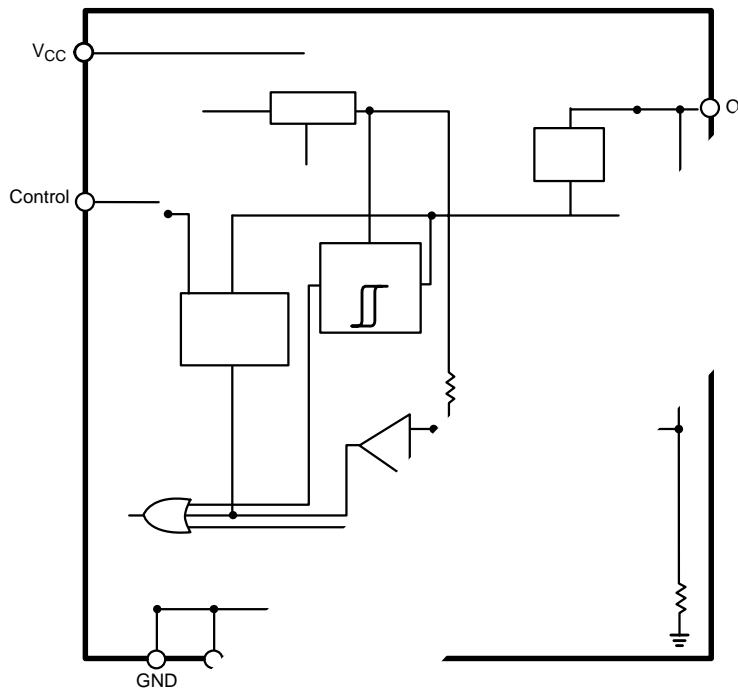# CS1108

Single Lamp Driver IC

This ASIC provides up to 350 mA of drive current for powering bulbs. The typical application for this part is for use in airbag systems using a type 194 bulb. On–chip diagnostics provide open circuit and short circuit detection in the output on mode. In addition, the output driver will turn on (sink current) when V_{CC} is low. $\overline{Fault}$ is an active–low output which reports in the output–on mode. Internal pull–up circuitry is provided to ensure the output pin turns on when the Control pin is floating.

Features

- Fault Detection
    - Open Circuit
    - Short Circuit
    - Overtemperature
- V_{CC} Sense: Output Turns On with Loss of V_{CC}
- Low Standby Current
- Internally Fused Leads in SO–8 Package

Block Diagram

CIRCUIT DESCRIPTION

The CS1108 lamp driver IC provides up to 350 mA of drive current in a low–side configuration. The Output driver pin is controlled through the TTL compatible Control input pin. A high condition on the Control pin turns the output pin on.

The $\overline{\text{Fault}}$ pin reports short circuit, open circuit, and overtemperature conditions on the IC. If a fault is present, the open collector output $\overline{\text{Fault}}$ pin will be low. Typical numbers for faults are: exceeding 500 mA of drive current will report a short circuit. Less than 40 mA (typical) will report an open circuit. A temperature fault will be reported when the die temperature exceeds 180°C (typical). Faults are only reported when the Control pin is high, due to the low quiescent current when the Control pin is low and the output device is turned off.

The CS1108 is designed to provide overcurrent protection by duty cycle control. When the lamp current exceeds the internally programmed current limit threshold (typically 500 mA), the output enters duty cycle mode to reduce power dissipation of the IC to a safe level.

Typical lamps have a low resistance when off and the current will exceed the current limit threshold during the initial inrush period. During this inrush time, the IC will be operating in the duty cycle mode. Due to characteristics of

PACKAGE DIMENSIONS

SO–8