### OVERVIEW

Using the PIC12C67X, with a power MOSFET and some other circuitry, it could replace the typical thermal blinker. It could offer a large number of improvements. Using the ADC w/ current shunt, it could monitor for bulbs that had shorted or opened. Using one of the extra pins as a serial link, it could report back to a main computer in the car that one or more of the bulbs were bad. It would also offer short circuit protection by limiting current and shutting off the circuit. It would report the error back to the main computer in the car. It even could change the flashing frequency if necessary i.e. speed of car or weather/temp. With the addition of a small piezo speaker, it could offer a tone with it flash to remind people that the blinker was on. With additional inputs and mosfets, it could also monitor other lights on the vehicle, such as the brake lights. It could immediately warn the driver of bulb failures.

In order to correctly sense the current used by the light bulbs, it would need delay sensing the current a few 100ms after applying power to the bulbs. This is because of the surge current that the bulbs need. For the serial link, it would depend on the main computer in the car and what serial bus it uses. It could be a simple asynchronous port to a more complex I²C™ bus. The other functions are simple timing/delay loops.