



Analog, Mixed Signal and Power Management

MC10XS3425

Quad high side switch—dual 10 mOhm, dual 25 mOhm

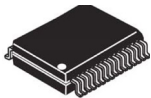
Applications

- Low-voltage automotive lighting
 - Xenon bulbs
 - Halogen bulbs
 - Light-emitting diodes (LEDs)
 - High beam
 - Low beam
 - Flashers
- Low-voltage industrial lighting

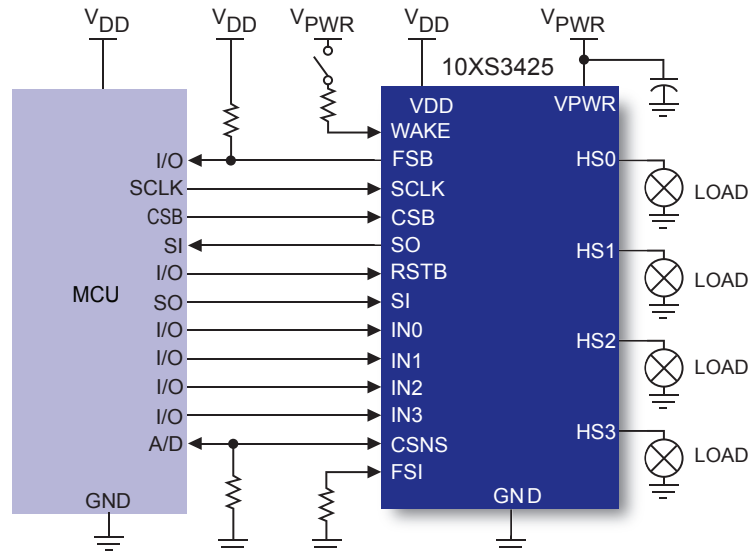
Overview

The MC10XS3425 is one in the family of devices designed for low voltage automotive lighting applications. Its four low $R_{DS(ON)}$ can control four separate 55 W/28 W bulbs, and/or Xenon modules, and/or LEDs. Programming, control, and diagnostics are accomplished using a 16-bit SPI interface. Its output with selectable slew rate improves electromagnetic compatibility (EMC) behavior. Additionally, each output has its own parallel input or SPI control for pulse-width modulation (PWM) control, if desired. The MC10XS3425 allows the user to program via the SPI the fault current trip levels and duration of acceptable lamp inrush. The device has Fail-safe mode to provide functionality of the outputs in case of a damaged MCU.

MC10XS3425 Simplified Application



EK SUFFIX (Pb-FREE)
98ASA00368D
32-PIN SOICW-EP



Product Features

- Four protected 10 mΩ and 25 mΩ high side switches (at 25 °C)
- Operating voltage range of 6.0 to 20 V with standby current < 5.0 μA, extended mode from 4.0 to 28 V
- 8.0 MHz 16-bit 3.3 V and 5.0 V SPI control and status reporting with daisy chain capability
- PWM module using external clock or calibratable internal oscillator with programmable outputs delay management
- Smart overcurrent shutdown, severe short-circuit, overtemperature protections with time limited autoretry, and Fail-safe mode in case of MCU damage
- Output OFF or ON open-load detection compliant to bulbs or LEDs (<10 mA) and short to battery detection. Analog current feedback with sectable ration and board temperature feedback

Orderable Part

Part Number (for Tape and Reel, add an R2 suffix)	Temp. Ranges	Features	Package
MC10XS3425EK	-40 to +125 °C	Two—10 mΩ, Two—25 mΩ high side switches	98ASA00368D 32-pin SOICW-EP

Development

Part Number	Description
KIT10XS3425EVBE	Evaluation Board - Contact Freescale Sales

Documentation

Document Number	Title	Description
MC10XS3425	Quad High Side Switch (Dual 10 mΩ, dual 25 mΩ)	Data Sheet
SG1002	Analog, Mixed Signal and Power Management	Selector Guide
SG187	Automotive	Selector Guide

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