



Analog, Mixed Signal and Power Management

# MC07XS3200

## Dual High Side Switch (7.0 mOhm)

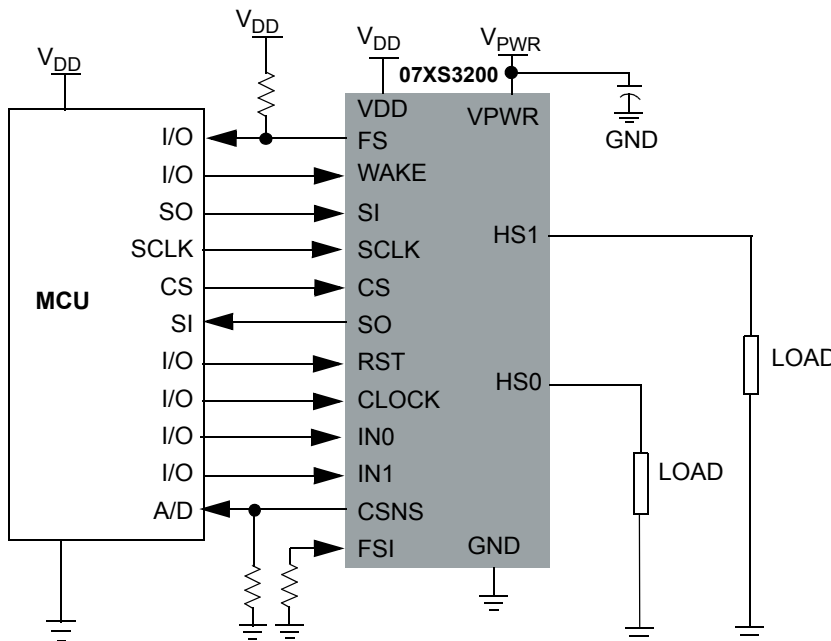
### Overview

The MC07XS3200 is one in a family of devices designed for low-voltage automotive lighting applications. Its two low  $R_{DS(ON)}$  MOSFETs (dual 7.0 m $\Omega$ ) can control four separate 55 W / 8 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 MC07XS3200 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 fail-safe functionality of the outputs in case of MCU damage. The MC07XS3200 is packaged in a Pb-free power-enhanced 32 pins SOIC package with exposed pad.

### MC07XS3200 Simplified Application Diagram



### Applications

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

## Product Features

- Dual 7.0 mΩ max high side switch switches at 25 °C
- Operating voltage range of 6.0 to 20 V with sleep 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
- Pulse-width modulation (PWM) module using external clock or calibratable internal oscillator with programmable outputs delay management
- Smart over-current shutdown compliant to huge inrush current, severe short-circuit, overtemperature protections with time limited auto retry, and Fail-safe mode in case of MCU damage
- Output OFF or ON open-load detection compliant to bulbs or LEDs and short to battery detection. Analog current feedback with selectable ratio and board temperature feedback

Performance	Typical Values
# of Outputs	2
R <sub>DS(ON)</sub> @ 25 °C	2 x 7 mOhms
Operating Voltage	6 - 20 V
Peak Current	93.4 A
ESD	±8.0 kV power I/Os ±2.0 kV digital I/Os
Ambient Operating Temperature	-40 °C < T <sub>A</sub> < 125 °C
Junction Operating Temperature	-40 °C < T <sub>J</sub> < 150 °C

## Ordering Information

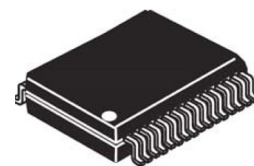
Part Number	Temp. Ranges	Features	Package
PC07XS3200EK	-40 to +125 °C	Dual - 7 mOhms High Side Switches	32 SOIC-EP

## Documentation

Document Number	Title	Description
MC07XS3200	Dual High Side Switch (7.0 mΩ)	Data Sheet
SG1002	Analog, Mixed Signal and Power Management	Selector Guide
SG187	Automotive	Selector Guide

## Protection

Protection	Detect	Shut Down	Auto Retry	Status Reporting
Short-circuit	•	•		•
Overtemperature	•	•	•	•
Overcurrent	•	•	•	•
Overvoltage	•	•		•
Undervoltage	•	•	•	•
Open Load Detect	•			•
Output Shorted to Battery	•			•



PB-FREE  
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