ANALOG PRODUCTS

MC33882 FACT SHEET

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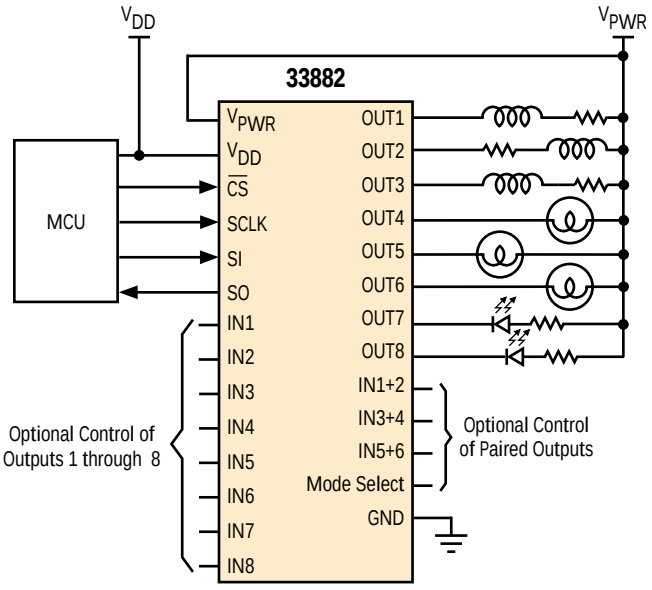
POWER ICs
LOW-SIDE SWITCH

33882 SMART SIX-OUTPUT SWITCH (0.3 Ω $R_{DS(ON)}$) WITH SPI AND PARALLEL INPUT CONTROL

The 33882 is a smart six-output low-side switch able to control system loads up to 1.0 A. The six outputs can be controlled via both SPI and parallel input control, making the device attractive for fault tolerant system applications. There are two additional 30 mA low-side switches with SPI diagnostic reporting (with parallel input control only).

The 33882 is designed to interface directly with industry-standard micro-controllers via SPI to control both inductive and incandescent loads. Each output is configured as an open-drain power MOSFET incorporating internal dynamic clamping and current limiting. The device has multiple monitoring and protection features including low standby current, fault status reporting, internal 52 V clamp on each output, output-specific diagnostics, and shutdown. In addition, it has a mode select pin affording a dual means of input control.

Simplified Application Diagram



APPLICATIONS

- Farm Equipment
- Industrial Equipment
- Fractional Horsepower DC-Motor Controls
- Marine Systems
- Incandescent Lamp Control in Control Panels
- Robotic Systems
- Automotive Injectors

CUSTOMER BENEFITS

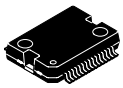
- Reduced part count and simplified circuitry
- Simple interfacing to industry-standard 5.0 V microprocessors having SPI
- Simple means of getting diagnostic fault status
- Built-in device protection features
- Efficient control of up to six 1.0 A and two low current loads (30 mA) using a single IC

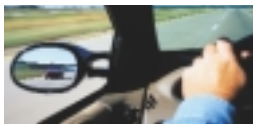
Performance	Typical Values
Outputs	6
$R_{DS(ON)}$ @ 25°C	0.3 Ω
Operating Voltage	5.5 – 25 V
Peak Current	3.0 A each output
Control	SPI & Parallel
Operating Temp	$-40°C \le T_A \le 125°C$
Junction Operating Temp	$-40°C \le T_J \le 150°C$

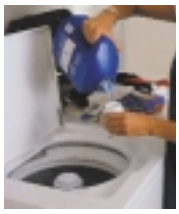
FEATURES

- Outputs clamped for switching inductive loads
- Very low operational bias currents < 2.0 mA
- CMOS input logic compatible with 5.0 V logic levels
- Load dump robust (60 V transient at V_{PWR})
- Daisy chain operation of multiple devices possible
- Switch outputs can be paralleled for higher currents
- Additional devices available for comparison in Analog Selector Guide SG1002/D

Protection	Detect	Limiting	Shut Down	Auto Retry	Status Reporting
Over Voltage	•		•		•
Over Current/SC	•	•	•	•	•
Over Temperature	•		•	•	
Open Load	•				•

Ordering Information	Package	Ship Method	Motorola Part Number
	30 HSOP	Rail T/R	**33882DH **33882DHR2
	32 QFN	Rail T/R	**33882FC **33882FCR2
Data Sheet Order Number			MC33882/D
Contact Sales for Evaluation Kit Availability			
**Prefix Index: PC = Eng Samples; XC = In Qual; MC = Production			





QUESTIONS

- Are you looking for an easy-to-design-in device capable of controlling up to six 1.0 A and two 30 mA low-side loads?
- Do you need to switch multiple loads in a harsh environment?
- Do you need a multiple output low-side switch device controlled by a microcontroller?
- Do you need a device to control multiple outputs with a dual means of input control (SPI and parallel) to implement a fault tolerant system?
- Do you need a device that incorporates sleep mode for power conservation and has diagnostic status reporting?

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