

ANALOG PRODUCTS

MC33982 FACT SHEET



33982 PROTECTED HIGH-CURRENT, HIGH-SIDE SWITCH (2.0 mΩ R_{DS(ON)})

The 33982 is a protected 2.0 mΩ R_{DS(ON)} high-side switch used to replace relays, fuses, and mechanical switches in high current applications.

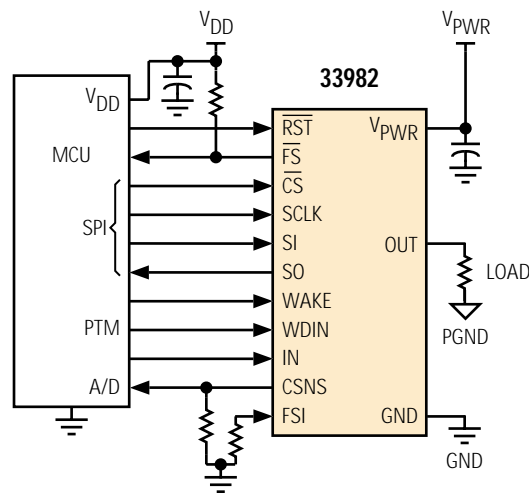
The 33982 includes both parallel and SPI input control, SPI programmability of over-current blanking and fault-current thresholds, selectable load-current feedback, overtemperature fault status reporting, and over- and under-voltage shutdown with hysteretic retry. Diagnostics are also reported via SPI.

The SPI programmable features allow for optimal application performance adjustments to be made.

APPLICATIONS

- Automotive Systems
- Aerospace Systems
- Robotic Systems
- Marine Equipment
- Farm Equipment
- Actuator Controls
- Fractional Horsepower DC-Motor Controls
- Applications where high-side switch control is required

Simplified Application Diagram



CUSTOMER BENEFITS

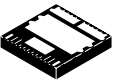
- Economical high-current switch requiring few external parts and simple to hook-up
- Can be used with microprocessors having SPI in high-side switching applications
- High efficiency, low ON resistance switching
- Reduced PC board space resulting in enhanced application reliability and lower costs
- Numerous internal protection and programmable performance features
- Output internally clamped to -24 V for inductive load switching applications

Performance	Typical Values
Outputs	1
R _{DS(ON)} @ 25°C	2.0 mΩ
Operating Voltage	6.0 – 27 V
Peak Current	150 A
PWM Input Control	150 Hz
ESD	± 2000 V
Operating Temp	-40°C ≤ T _A ≤ 125°C
Junction Operating Temp	-40°C ≤ T _J ≤ 150°C

FEATURES

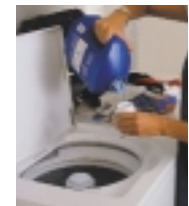
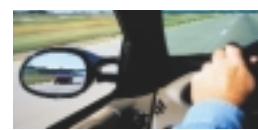
- Load current monitoring output with two SPI selectable current ratios
- SPI Programmable: overcurrent limit levels, overcurrent detection levels, overcurrent fault blanking time, output-OFF open load detection, output ON/OFF control, output turn-ON delay, and Watchdog timeout
- SPI status reporting of: overcurrent, open and shorted loads, overtemperature, under- and over-voltage shutdown, fail-safe pin status, and program status
- Parallel input PWM control
- Additional devices available for comparison in Analog Selector Guide SG1002/D

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

Ordering Information	Package	Ship Method	Motorola Part Number
	16 PQFN	Rail T/R	**33982FC **33982FCR2
Data Sheet Order Number			MC33982/D
Contact Sales for Evaluation Kit Availability			
**Prefix Index: PC = Eng Samples; XC = In Qual; MC = Production			

QUESTIONS

- Need a high-side switch capable of typically switching 150 A?
- Need a microcontroller controlled high-side switch with a programmable Watchdog to monitor the MCU?
- Do you have limited PC board space available for load control?
- Need an easy-to-design high-side switch with internal Charge Pump that is capable of low speed PWM switching with a dedicated parallel input?



How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217
1-303-675-2140 or 1-800-441-2447

JAPAN: Motorola Japan Ltd.; SPS, Technical Information Center,
3-20-1, Minami-Azabu, Minato-ku, Tokyo 106-8573 Japan
81-3-3440-3569

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre,
2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong
852-26668334

Technical Information Center: 1-800-521-6274

HOME PAGE: <http://www.motorola.com/semiconductors>



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Rev. 1