



ANALOG PRODUCTS

MC33888 FACT SHEET

POWER ICs
HIGH-SIDE SWITCH

33888 QUAD HIGH-SIDE SWITCH AND OCTAL LOW-SIDE SWITCH

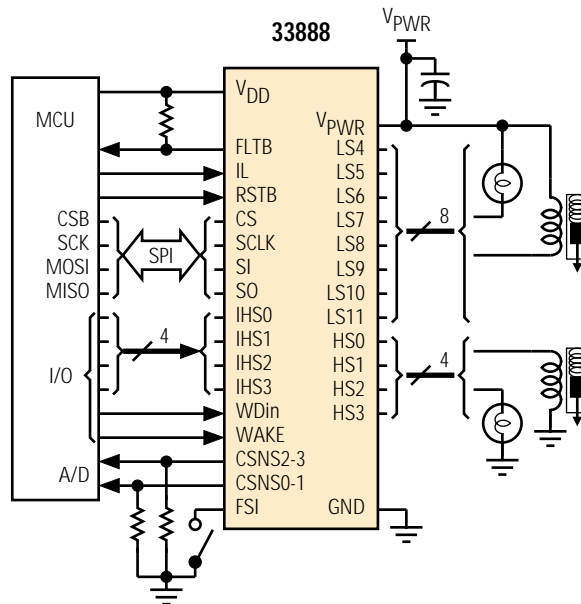
The 33888 is a multi-chip combination in a single package. The chip combination consists of four discrete high-side FETs and an integrated IC having eight low-side drivers with appropriate control, protection, and diagnostic features. The high-side drivers are useful for incandescent lamp control as well as driving inductive solenoid loads.

The low-side drivers are capable of controlling low current ON/OFF type inductive loads, such as relays and solenoids as well as LED indicators and small lamps. The device is very useful for instrumentation panels, and other high-power switching applications.

APPLICATIONS

- Aircraft Systems
- Automotive Systems
- Robotic Systems
- Farm Equipment
- Industrial Actuator Control
- Fractional Horsepower DC-Motor Controls
- Marine Systems
- Incandescent Lamp Control
- Applications where High-Side and Low-Side Switch Control with Diagnostics is Needed

Simplified Application Diagram



CUSTOMER BENEFITS

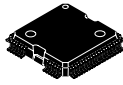
- Economical multi-function solution with few components
- Simple implementation using direct interfacing to a microprocessor
- Compact combination of 4 high-side and 8 low-side switches in a single package
- Increased switching efficiency with very low $R_{DS(ON)}$ FETs
- Reduced PC board space resulting in enhanced application reliability
- Internal safety features with output status reporting and SPI

Performance	Typical Values
Outputs	12
$R_{DS(ON)}$ @ 25°C	
4 High-Side	2 @ x 0.08 Ω, 2 @ 0.030 Ω
8 Low-Side	0.5 Ω
Operating Voltage	6.0 – 27 V
Peak Current	
4 High-Side	2 @ 40 A, 2 @ 23 A
8 Low-Side	4 @ 500 mA, 4 @ 800 mA
ESD	± 2000 V
Operating Temp	-40°C ≤ T _A ≤ 125°C
Junction Operating Temp	-40°C ≤ T _J ≤ 150°C

FEATURES

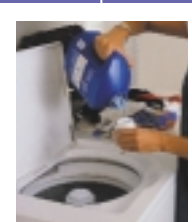
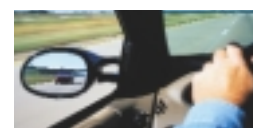
- Breakdown voltage greater than 41 V
- Protected against loss of ground, loss of V_{PWR}
- Enhanced -16 V reverse battery protection (MOSFETs turned ON)
- Surface mount power package
- SPI and/or parallel control of four high-side switches
- SPI control of eight low-side switches (one switch also parallel controlled)
- SPI or direct-fed watchdog with diagnostics
- Very low quiescent current in standby mode
- 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	•		•	•	•
Short to GND	•	•			•
Short to V_{PWR}	•	•	•		•

Ordering Information	Package	Ship Method	Motorola Part Number
	MO 188	Rail T/R	**33888FB **33888FBR2
Data Sheet Order Number			MC33888/D
Contact Sales for Evaluation Kit Availability			
**Prefix Index: PC = Eng Samples; XC = In Qual; MC = Production			

QUESTIONS

- Need an economical solution to control of 4 high-side and 8 low-side switched loads using an MCU?
- Do you have limited PC board space available for load control?
- Do you need to control 12 incandescent or inductive loads over a wide temperature range?
- Are you looking for an easy-to-design "smart" switch, capable of switching many loads?
- Do you need a "smart" switch with internal protection and fault reporting features?



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MC33888FS/D
Rev. 1

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