



**ANALOG  
PRODUCTS**

**MC33287  
FACT SHEET**

**APPLICATIONS**

- Aircraft Systems
- Aerospace Systems
- Robotic Systems
- Automotive Systems
- Process Control Systems
- Security Systems
- Applications where Switch Status Verification for Safety, Operation, or Process Control Purposes is of Critical Concern

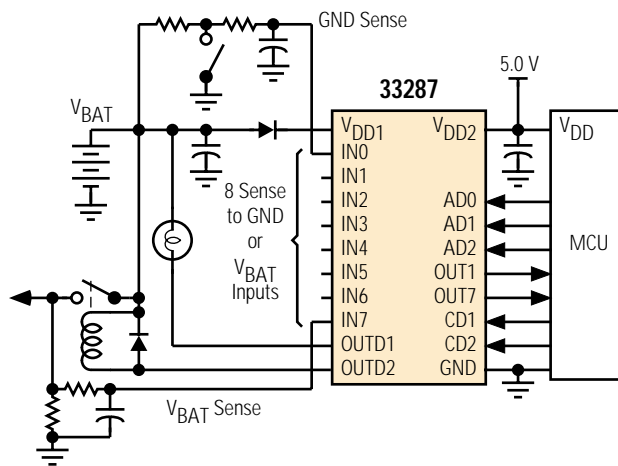
**33287 CONTACT MONITORING AND DUAL LOW-SIDE PROTECTED DRIVER**

The 33287 interfaces between switch contacts and a microcontroller. Eight switch-to-battery (or switch-to-ground) sense inputs monitor switch status. In addition, two internal low-side switches are available to control inductive or capacitive loads.

The 33287 has eight sense inputs (rated at 40 V) with thresholds ratiometric to  $V_{BAT}$ . One sense input has a dedicated output for direct interfacing to the MCU and the remaining seven inputs are multiplex interfaced to the MCU.

The two low-side switch outputs are current limited to 535 mA and internally clamped to 50 V. The outputs also have independent overtemperature shutdown and diagnostic reporting.

**Simplified Application Diagram**



**CUSTOMER BENEFITS**

- Simple interfacing to industry-standard 5.0 V microcontroller
- No need for SPI
- Robust with proven automotive track record
- Ease and versatility of reporting switch status
- Surface-mounted device for space and cost economy of scale with few external parts

Performance	Typical Values
Inputs	8
Outputs	2
Switch Voltage Range	- 0.3 – $V_{PWR}$
Operating Voltage	7.0 – 24 V ( $V_{PWR}$ )
Quiescent Current	110 $\mu$ A
Control	Direct/Mux
Operating Temp	-40°C $\leq T_A \leq$ 125°C

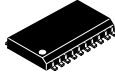
**SPECIAL FUNCTION  
CONTACT MONITOR**

## FEATURES

- Eight high-voltage sense inputs
- Direct interfacing to microcontroller
- Two current limited low-side drivers
- Drivers internally overvoltage clamped and thermally protected
- 55  $\mu$ A standby current
- Additional devices available for comparison in Analog Selector Guide SG1002/D

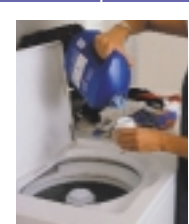
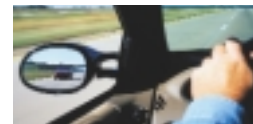
Protection	Detect	Limiting	Shut Down	Auto Retry	Status Reporting
Over Current/SC	•		•		•
Over Temperature	•		•		•
Short to $V_{PWR}$	• Detected by overcurrent or overtemperature)				

Overcurrent and thermal protection applicable on low-side output only

Ordering Information	Package	Ship Method	Motorola Part Number
	20 SOICW	Rail T/R	**33287DW **33287DWR2
Data Sheet Order Number			MC33287/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 that will monitor the ON/OFF status of multiple switches used in your system?
- Does your system have available a standard microcontroller with few input/output?
- Do you need a device to reduce the switch-monitoring burden placed on the system's microprocessor?
- Do you need a switch status-reporting device that has a sleep mode feature for system power conservation?
- Do you need to drive additional low power load such as relays, with overload protection and diagnostic?
- Do you have little PC board space available for the monitoring of switches or for the driving of peripheral devices or circuits?



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MC33287FS/D  
Rev. 1

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