ANALOG PRODUCTS

MC33884 FACT SHEET

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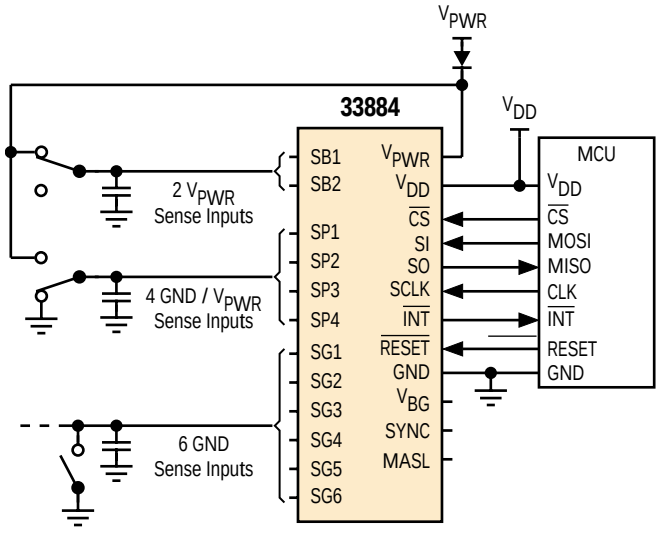
33884 SWITCH MONITOR INTERFACE

The 33884 provides ON/OFF status reporting of multiple external system switches. The device efficiently interfaces between system electrical switches and low voltage microprocessors. All inputs are protected against transients when implemented with recommended discharge capacitors placed on the inputs.

The 33884 has four operational modes:

- *Sleep* reduces current to 10 µA and disables the IC
- *Normal* interrupts the MCU when an external switch status changes
- *Polling* periodically reads switch status, interrupts the MCU only when a switch is “closed”, reverting operation to Normal mode
- *Polling + INT Timer* interrupts the MCU when switch is sensed “closed” or when internal timer "times out". Mode continues with all switches “open”; otherwise reverts to normal mode.

Simplified Application Diagram



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

CUSTOMER BENEFITS

- Low system cost, minimal component count, and simple circuit hook-up to system
- Simple interfacing to 5.0 V microprocessors having SPI
- Robust with proven automotive track record
- Simple means of confirming open/closed switch status of multiple system switches
- Ease and versatility of reporting switch status

Performance	Typical Values
Inputs	12
Switch Voltage Range	- 14 – V_{PWR}
Operating Voltage	7.0 – 26 V (V_{PWR})
Contact Wetting Current	1 mA
Quiescent Current	10 µA
Control	SPI
Operating Temp	-40°C ≤ T_A ≤ 105°C

SPECIAL FUNCTION CONTACT MONITOR

FEATURES

- Wake-up on change of monitored status
- Four programmable inputs to monitor four switch-to-battery switches
- Four programmable inputs to monitor four switch-to-ground switches
- Six fixed-function inputs to monitor six switch-to-ground switches
- Two fixed-function inputs to monitor two switch-to-ground switches
- Additional devices available for comparison in Analog Selector Guide SG1002/D

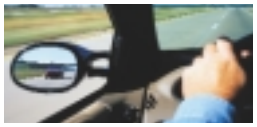
Protection

Internal 4.0 kV ESD protection of inputs

Ordering Information	Package	Ship Method	Motorola Part Number
	24 SOICW	Rail	**33884DW
		T/R	**33884DWR2
Data Sheet Order Number			MC33884/D

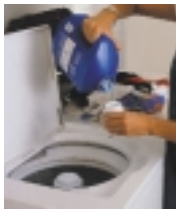
Contact Sales for Evaluation Kit Availability

**Prefix Index:
PC = Eng Samples; XC = In Qual; MC = Production



QUESTIONS

- Are you looking for an easy-to-design-in device that will continuously monitor the ON/OFF status of multiple switches used in your system?
- Does your system have available a SPI protocol microprocessor?
- Do you need a device to reduce the switch monitoring burden placed on the system's microprocessor?
- Do you need a versatile device that can monitor both the status of multiple system switches and source or sink currents to operate peripheral devices of your system?
- Do you need a switch status-reporting device that has a sleep mode feature for system power conservation?
- Do you need a switch status-reporting device that will pinpoint a specific switch in a system as having changed its ON/OFF status?
- Do you have little PC board space available for the monitoring of switches or for the driving of peripheral devices or circuits?



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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