

**ANALOG
PRODUCTS**

**PC33895
FACT SHEET**



APPLICATIONS

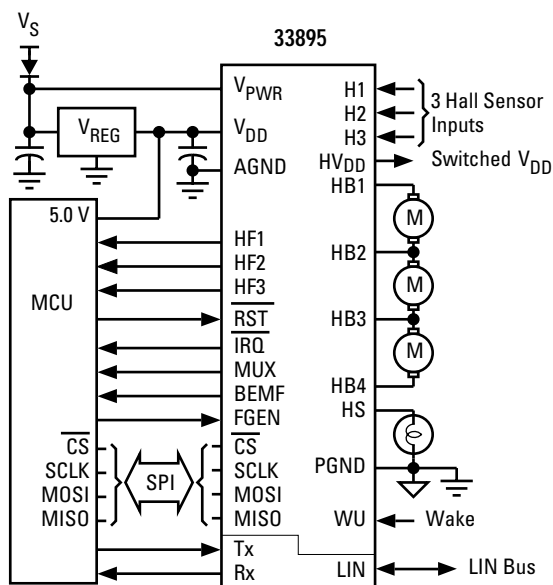
- Automotive Systems
- Aircraft Systems
- Robotic Systems
- Farm Equipment
- Industrial Actuator Control
- Marine Applications

PC33895 QUAD HALF-BRIDGE WITH LIN TRANSCEIVER

The PC33895 is a monolithic IC incorporating functions frequently used in micro controller based systems. The four contained half bridges and high side switch outputs are fully protected and the switched V_{DD} output is over current protected. The PC33895 has a SPI input for both control with diagnostic reporting, output load current reporting, and a LIN physical layer for communication.

The combination offers an economical solution in providing power to four half-bridges accommodating three shared H-Bridges, one high side switch output, one switched supply output, plus facilitating LIN communication for MCU based systems.

Simplified Application Diagram



CUSTOMER BENEFITS

- Simple system design with direct interfacing to an MCU
- Reduced space resulting in enhanced reliability
- Internal protection features fully protecting output stages with status reporting
- Short design cycle time
- Economical multi function solution with few external components
- Easy control of DC - Motors as well as Stepper - Motors


PERFORMANCE TYPICAL VALUES

PERFORMANCE	TYPICAL VALUES
Power Outputs:	
Half-Bridges $R_{DS(on)}$	4 x 400 m Ω @ 25°C
High-Side $R_{DS(on)}$	1 x 600 m Ω @ 25°C
Switched V_{DD}	1 x 30 mA
Inputs:	
SPI	1
Hall	3
Wake-Up	1
Bus Output	LIN
Operating Voltage	9.0 – 18 V
ESD	4000 V
Operating Temp	-40°C \leq T_A \leq 125°C

FEATURES

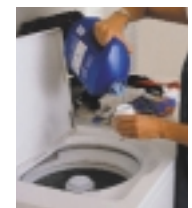
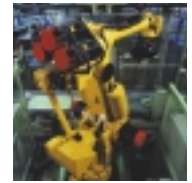
- Four half-bridge power outputs with diagnostic reporting, selectable current limit, and load current reporting
- One high side output for controlling lamps
- Bridge back EMF reporting (BEMF) for motor stall detection (stepper motor applications)
- LIN physical layer with active wave shaping for lower radiated EMI
- Three Hall sensor inputs with direct logic outputs to MCU
- Switched V_{DD} output
- Sleep with cyclical Wake-Up capability
- Wake-Up input

Protection	Detect	Shut Down	Limiting	Auto Retry	Status Reporting
Half-Bridge Outputs					
Under Voltage	•	•			•
Over Voltage	•	•			•
Over Temperature	•	•			•
Over Current/SC	•	•		•	•
High-Side Output					
Under Voltage	•	•			•
Over Voltage	•	•			•
Over Temperature	•	•			•
Over Current/SC	•	•	•	•	•
LIN Bus					
Over Temperature	•	•			•
Over Current	•		•	•	•
HVDD Output					
Over Temperature	•	•			•
Over Current	•	•			•
Hall Inputs					
Over Current	•		•	•	•

Ordering Information	Package	Ship Method	Motorola Part Number
	QFN 7x7	Rail T/R	PC33895FC PC33895FCR2
	Data Sheet Order Number		MC33895/D

QUESTIONS

- Do you need to control small DC-motors in a microcontroller based system?
- Do you need four half H-Bridges, a LIN transceiver, and other controlled high-side power outputs in a single package?
- Do you have limited space available for load control?
- Do you need a flexible solution for load control and protocol handling?
- Do you have a need to reduce system cost?



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/>



MOTOROLA and the Stylized M Logo are registered in the U.S. Patent & Trademark Office. All other product or service names are the property of their respective owners.

© Motorola, Inc. 2002

MC33895FS/D

Rev. 0