



**ANALOG  
PRODUCTS**

**MC33285  
FACT SHEET**

**POWER ICs  
PRE-DRIVER**

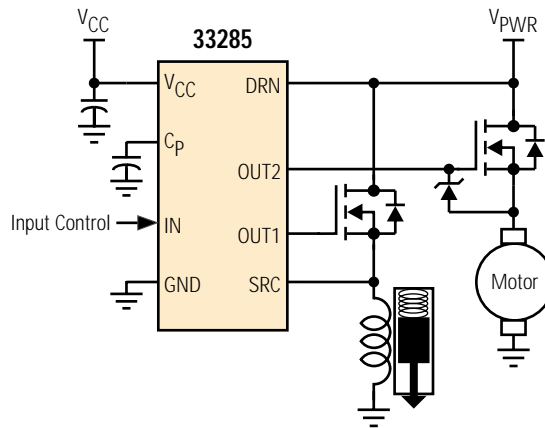
**33285 DUAL HIGH-SIDE TMOS DRIVER**

A single input controls the 33285 in driving two external high-side N-Channel TMOS power FETs controlling incandescent or inductive loads. Pulse Width Modulated input control to 1.0 kHz is possible. The 33285 contains a common internal charge pump used to enhance the Gate voltage of both FETs. An external charge capacitor provides access to the charge pump output. Both external FETs are protected against inductive load transients by separate internal source-to-gate dynamic clamps. The power FETs are protected by the 33285 with over-current delay time of 800  $\mu$ S. The device is designed to withstand reverse polarity battery and load dump transients as encountered in automotive applications.

**APPLICATIONS**

- Aircraft Systems
- Automotive Systems
- Robotic Systems
- Farm Equipment
- Industrial Actuator Control
- Fractional Horsepower DC-Motor Control
- Marine Applications
- Incandescent Lamp Control
- Applications Requiring High-Side MOSFET Switch-Control

**Simplified Application Diagram**



**CUSTOMER BENEFITS**


- Simple solution for operating high-side power FETs at voltages up to 40 V
- Easily used in microprocessor or stand-alone manual circuit applications
- Versatile high-side switching of incandescent or inductive loads
- PWM frequency capable of 1.0 kHz switching
- Reduced PC board space resulting in enhanced reliability and lower costs
- Internal features protect the external power FETs

Performance	Typical Values
Inputs	1
Outputs	2
Operating Voltage	7.0 – 40 V
CP Delivery Current	20 $\mu$ A
PWM Capability	to 1.0 kHz
ESD	$\pm$ 2000 V
Operating Temp	$-40^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$
Junction Operating Temp	$-40^{\circ}\text{C} \leq T_J \leq 150^{\circ}\text{C}$

## FEATURES

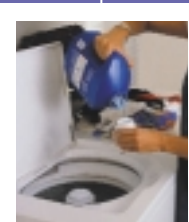
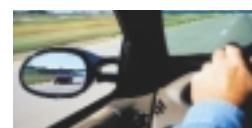
- Output control of two external N-channel high-side FETs
- Single input control with PWM capability
- 7.0 to 40 V operation
- Over-current latch-OFF protection of external power FET #1
- Over-voltage detection and activation of FET #2 during over-voltage
- Load dump transient protected
- Additional devices available for comparison in Analog Selector Guide SG1002/D

Protection	Detect	Limiting	Latch OFF
Over Voltage FET #1 -	•	•	
Over Current	•		•
Load Dump	•	•	

Ordering Information	Package	Ship Method	Motorola Part Number
	8 SOICN	Rail T/R	**33285D **33285DR2
Data Sheet Order Number			MC33285/D
Contact Sales for Evaluation Kit Availability			
**Prefix Index: PC = Eng Samples; XC = In Qual; MC = Production			

## QUESTIONS

- Need a pre-driver IC with internal charge pump to drive two external N-Channel high-side FETs?
- Do you have only a little board space for pre-driver load control?
- Do you need a pre-driver with protection for the two external N-Channel FETs?



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MC33285FS/D  
Rev. 1

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