



TF2003M

Half-Bridge Gate Driver

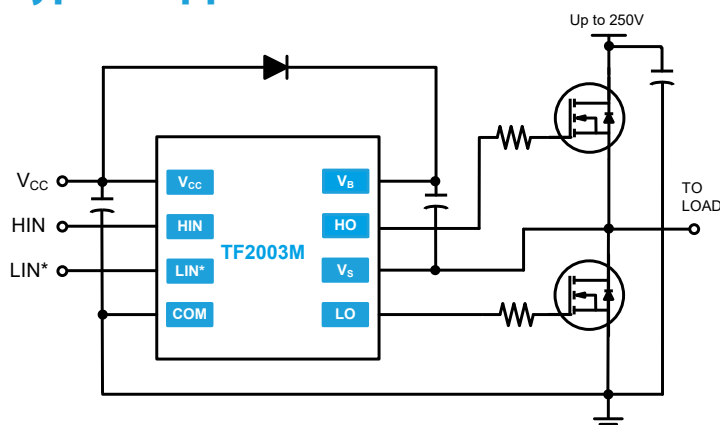
Features

- Floating high-side driver in bootstrap operation to 250V
- Drives two N-channel MOSFETs or IGBTs in a half bridge configuration
- Designed for enhanced performance in noisy motor applications
- 290mA source/600mA sink output current capability
- Outputs tolerant to negative transients
- Internal dead time of 420ns to protect MOSFETs
- Wide low side gate driver supply voltage: 10V to 20V
- Logic input (HIN and LIN*) 3.3V capability
- Schmitt triggered logic inputs
- Undervoltage lockout for V_{CC} (logic and low side supply)
- Extended temperature range: -40°C to +125°C

Applications

- Motor Controls
- DC-DC Converters
- AC-DC Inverters
- Motor Drives

Typical Application



Description

The TF2003M is a high voltage, high speed gate driver capable of driving N-channel MOSFETs and IGBTs in a half bridge configuration. TF Semiconductors's high voltage process enables the TF2003M high side to switch to 250V in a bootstrap operation.

The TF2003M logic inputs are compatible with standard TTL and CMOS levels (down to 3.3V) to interface easily with controlling devices. The driver outputs feature high pulse current buffers designed for minimum driver cross conduction. TF2003M has a fixed internal deadtime of 420ns (typical).

The TF2003M is offered in a SOIC-8(N) and PDIP-8 package and operates over an extended -40 °C to +125 °C temperature range.



SOIC-8(N)



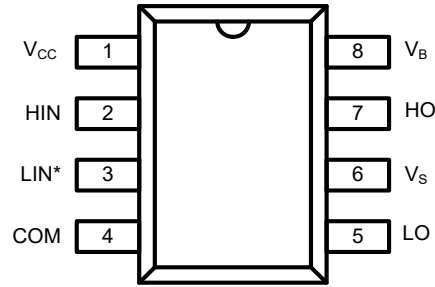
PDIP-8

Ordering Information

Year Year Week Week

PART NUMBER	PACKAGE	PACK / Qty	MARK
TF2003M-3AS	PDIP-8	Tube / 50	YYWW TF TF2003M Lot ID
TF2003M-TAU	SOIC-8(N)	Tube / 100	YYWW TF TF2003M Lot ID
TF2003M-TAH	SOIC-8(N)	T&R / 2500	YYWW TF TF2003M Lot ID

Pin Diagrams



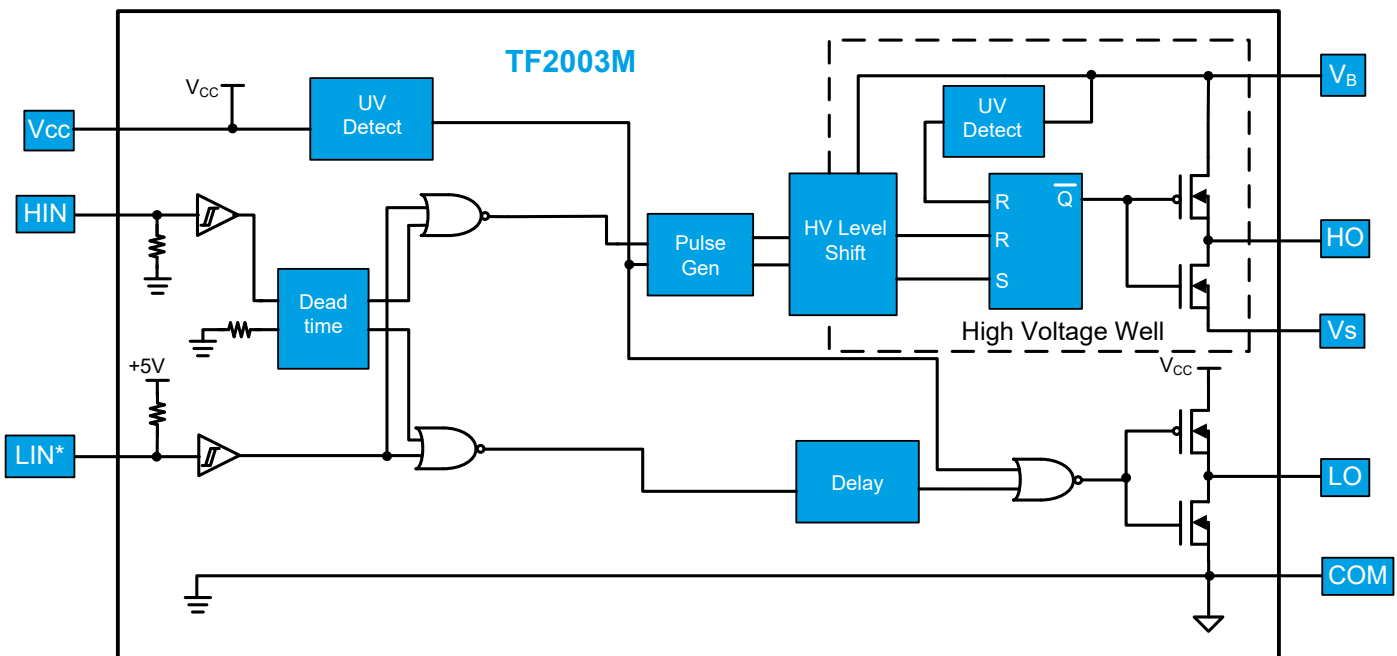
Top View: SOIC-8

TF2003M

Pin Descriptions

PIN NAME	PIN NUMBER	PIN DESCRIPTION
V_{CC}	1	Logic and low side supply
HIN	2	Logic input for high-side gate driver output in phase with HO
LIN*	3	Logic input for low-side gate driver output out of phase with LO
COM	4	Low-side and logic return
LO	5	Low-side gate drive output
V_S	6	High-side floating supply return
HO	7	High-side gate drive output
V_B	8	High-side floating supply

Functional Block Diagram





Revision History

Rev.	Change	Owner	Date
1.0	First release, AI datasheet	D. Walton	12/5/2022

for additional information contact: info@tfsemiconductors.com

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