



# TF2104M

## Half-Bridge Gate Driver

### Features

- Floating high-side driver in bootstrap operation to 600V
- 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 to protect MOSFETs
- Wide low side gate driver supply voltage: 10V to 20V
- Logic input (IN and SD\*) 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

### Description

The TF2104M is a high voltage, high speed gate driver capable of driving N-channel MOSFETs and IGBTs in a half bridge configuration. TF Semi's high voltage process enables the TF2104M's high side to switch to 600V in a bootstrap operation.

The TF2104M 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.

The TF2104M is offered in PDIP-8 and SOIC-8(N) packages and operate over an extended -40°C to +125°C temperature range.



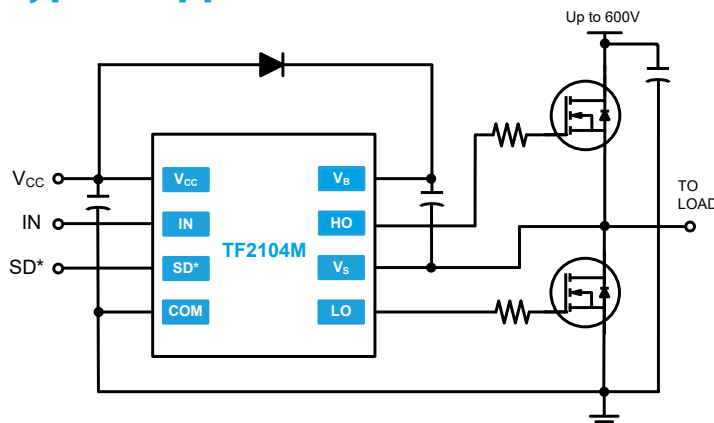
### Applications

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

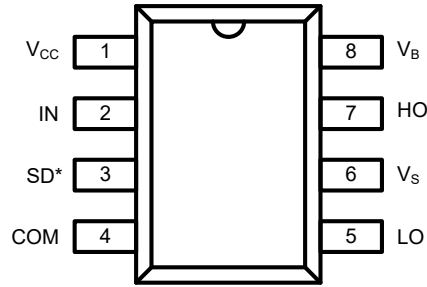
### Ordering Information

| PART NUMBER | PACKAGE   | PACK / Qty | YearYear WeekWeek         |
|-------------|-----------|------------|---------------------------|
|             |           |            | MARK                      |
| TF2104M-3AS | PDIP-8    | Tube / 50  | YYWW<br>TF2104M<br>Lot ID |
| TF2104M-TAU | SOIC-8(N) | Tube / 100 | YYWW<br>TF2104M<br>Lot ID |
| TF2104M-TAH | SOIC-8(N) | T&R / 2500 |                           |

### Typical Application



## Pin Diagrams



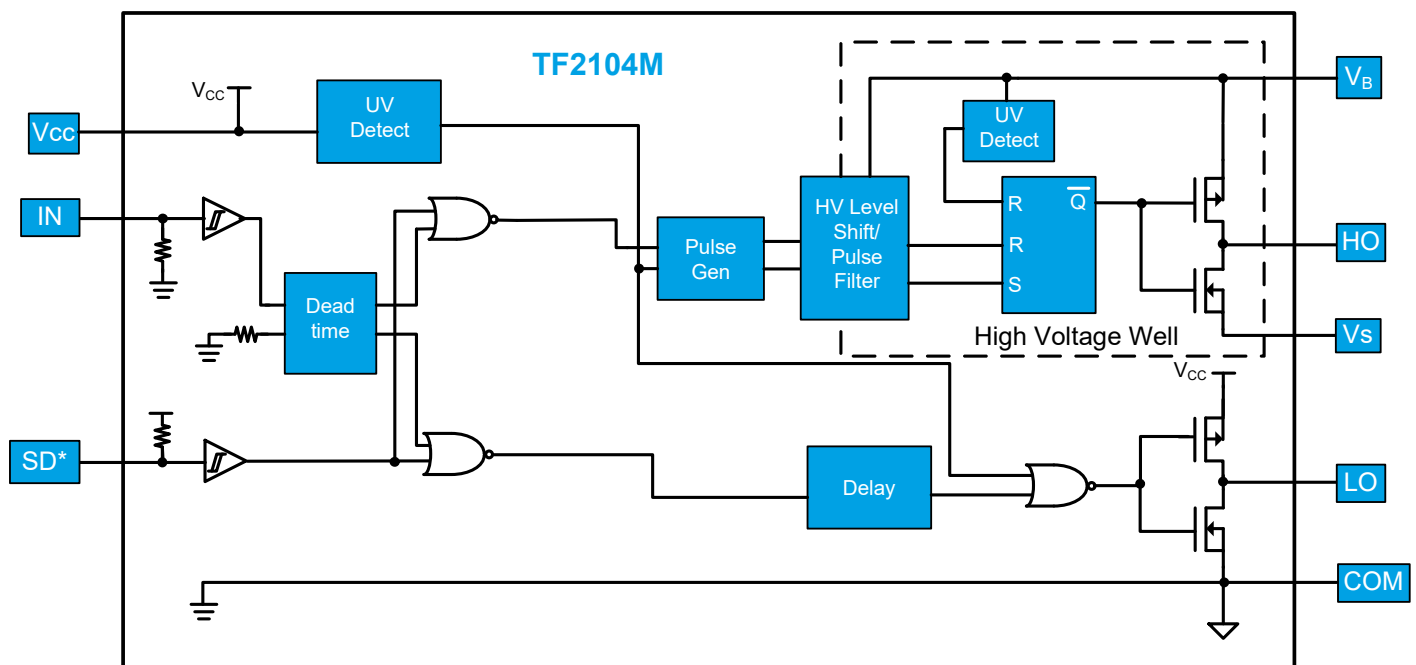
Top View: PDIP-8, SOIC-8

## Pin Descriptions

TF2104M

| PIN NAME | PIN NUMBER | PIN DESCRIPTION  |
|----------|------------|--|
| $V_{CC}$ | 1          | Logic and low side supply  |
| IN       | 2          | Logic input for high-side and low-side gate driver outputs (HO and LO), in phase with HO |
| SD*      | 3          | Logic input for shutdown, enabled low  |
| 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 | D. Walton | 12/7/2022 |
|      |               |           |           |

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