



# MP18831

## Isolated Dual-Input Control High-Side/Low-Side Half-Bridge Gate Driver

**PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE**

### DESCRIPTION

The MP18831 is an isolated half-bridge gate driver solution with up to 0.5A or 4A source and sink peak current capacity. The gate driver is designed to drive power switching devices with short propagation delay and pulse-width distortion. By utilizing MPS proprietary capacitive-based isolation technology, the driver can provide up to 5kV<sub>RMS</sub> withstand voltage (per UL1577) with SOIC wide-body package and greater than 100kV/μs common-mode transient immunity (CMTI) rating between the input side and output driver. With the advanced features, the drivers operate high efficiency, high power density, and robustness in a wide variety of power applications.

The MP18831 integrates dual-channel gate drivers in one package. Each output can be grounded to the separated grounds or connected to a positive or negative voltage reference. The secondary topology can be configured as a half-bridge high-side/low-side driver controlled respectively by two independent input signals. To prevent the occurrence of the shoot-through issue in half-bridge driver, the MP18831 provides the programmable dead-time set by an external resistor.

A wide primary-side VDDI supply range makes the driver suitable to be interfaced with 3.3V or 5V digital controllers. And the secondary-side driver accepts up to 30V supply. All the supply voltage pins are with various under voltage lock-out (UVLO) level protection.

The MP18831 is available in narrow-/wide-body SOIC-16 and LGA-13 5mmx5mm packages.

### FEATURES

- Dual-Input Half-Bridge Driver
- Up to 5kV<sub>RMS</sub> Input to Output Isolation (SOIC-16 WB)
- 1500V<sub>DC</sub> Functional Isolation between Two Secondary-Side Drivers (SOIC-16 NB/WB)
- 700V<sub>DC</sub> Functional Isolation between Two Secondary-Side Drivers (LGA-13 5mmx5mm)
- Common-Mode Transient Immunity (CMTI) >100kV/μs
- 2.8V to 5.5V Input VDDI Range to Interface with TTL and CMOS Compatible Inputs
- Up to 30V Output Drive Supply with Several UVLO Options
- 0.5A or 4A Source/Sink Peak Current Output
- 50ns Typical Propagation Delay
- Overlap Protection and Programmable Dead-time Control
- Operating Temperature Range -40°C to +125°C
- Narrow Body SOIC-16 (3kV<sub>RMS</sub> Isolation), Wide Body SOIC-16 (5kV<sub>RMS</sub> Isolation) and 5mm x 5mm LGA-13 (2.5kV<sub>RMS</sub> Isolation) Packages

### APPLICATIONS

- Half/Full-Bridge Converters
- Isolated DC/DC Converters
- Offline Isolated AC/DC Converters
- DC/AC Inverters

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## SELECTION GUIDE

Part Number	Peak Output Current (A)	Output UVLO (V)	On/Off Logic	Input Logic	Configuration	Overlap Protection	Programmable Dead-Time	Package Type
MP18831-0A	0.5	3	EN	INA/INB	High-Side /Low-Side Half-Bridge	Y	Y	SOIC-16 NB SOIC-16 WB LGA-13 (5mmx5mm)
MP18831-4A	4							
MP18831-0B	0.5	5						
MP18831-4B	4							
MP18831-0C	0.5	8						
MP18831-4C	4							
MP18831-0D	0.5	10						
MP18831-4D	4							
MP18831-0E	0.5	12						
MP18831-4E	4							
MP18831-A0A	0.5	3	DIS-ABLE	INA/INB	High-Side /Low-Side Half-Bridge	Y	Y	SOIC-16 NB SOIC-16 WB LGA-13 (5mmx5mm)
MP18831-A4A	4							
MP18831-A0B	0.5	5						
MP18831-A4B	4							
MP18831-A0C	0.5	8						
MP18831-A4C	4							
MP18831-A0D	0.5	10						
MP18831-A4D	4							
MP18831-A0E	0.5	12						
MP18831-A4E	4							