

## DESCRIPTION

The PT5606 is a high speed high voltage (600V) driver to control power devices like MOS-transistors or IGBTs in half bridge systems with dependent high and low side referenced output channels. The logic input is compatible with standard CMOS or LSTTL output, down to 3.3V logic. The device includes an under-voltage detection unit with hysteresis characteristic and prevents power devices against large amount of conduction loss, when voltage margin of gate is not high enough. The output drivers feature a high pulse current buffer stage designed for minimum driver cross-conduction. The floating channel can be used to drive an N-channel power MOSFET or IGBT, in the high side configuration which operates up to 600 volts.

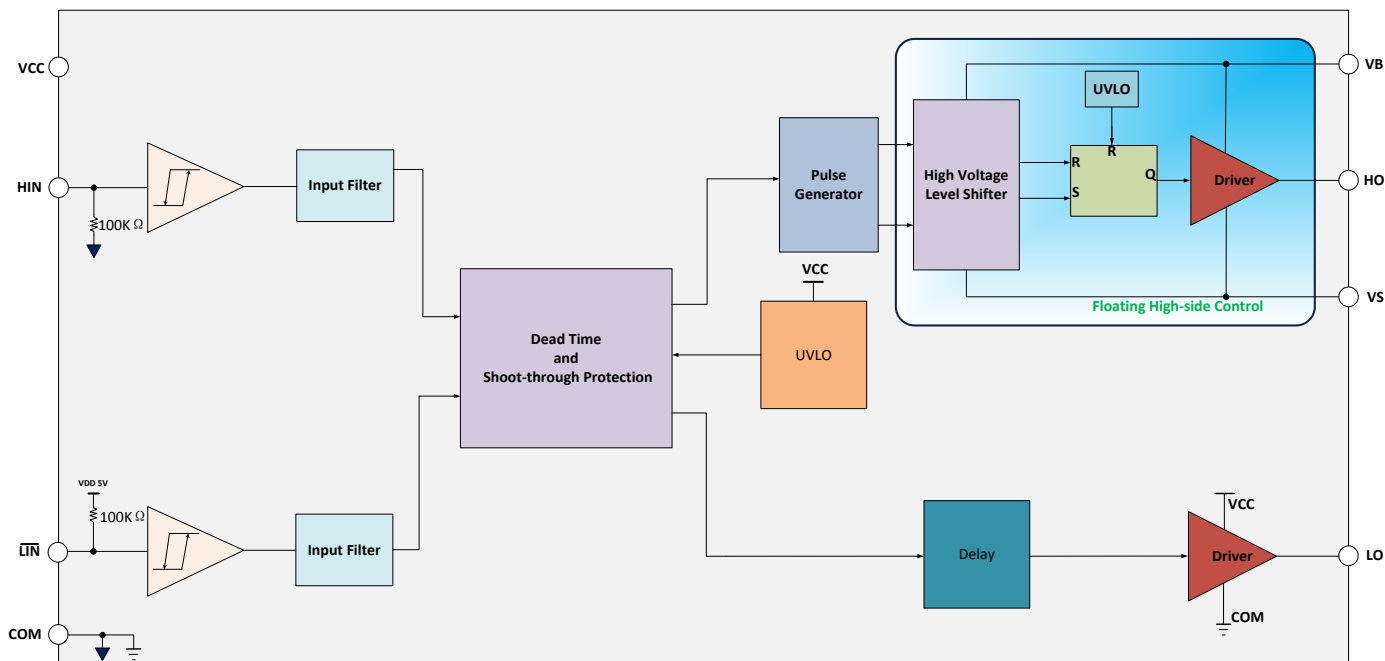
## APPLICATIONS

- Appliance motor drives—air conditioners, washing machines, refrigerator, dish washer, Fans
- General purpose inverters
- Electric bike, Electric tools
- Lighting, switching power supply

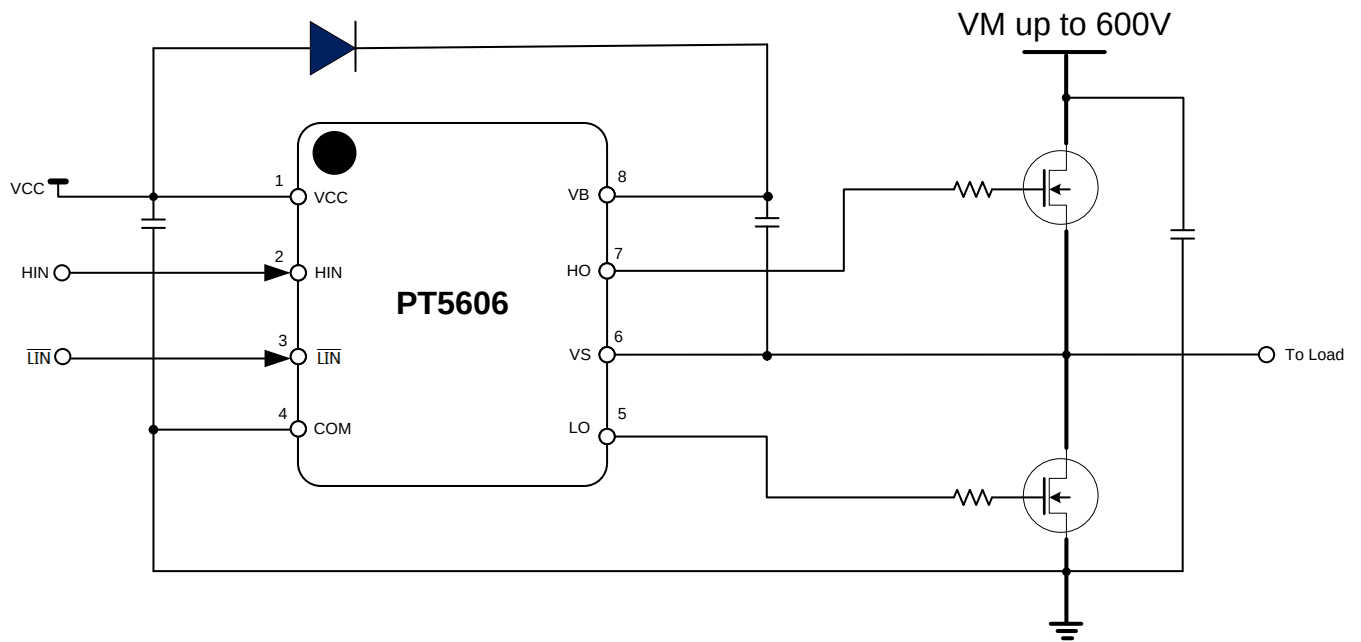
## FEATURES

- Drives two IGBT/MOSFET power devices
- high side channel fully operate up to +600V
- Gate drive supplies from 10V to 20 V per channel
- Under-voltage lockout
- Advanced input filter
- Built-in dead-time protection: 0.5us
- IO+/-: 290/620mA, large sourcing current to bypass miller effect
- Shoot-through (cross-conduction) protection
- 3.3 V/5V/15V input logic compatible
- Matched propagation delays for all channels
- Matched dead time
- High side output in phase with HIN input
- Low side output out of phase with  $\overline{\text{LIN}}$  input
- Tolerant to negative transient voltage, immunity of  $dv/dt$  up to 50V/ns
- Low  $di/dt$  gate drive for better noised immunity
- -40°C to 125°C operating range
- SOP8L Package available
- Lead-free

## BLOCK DIAGRAM



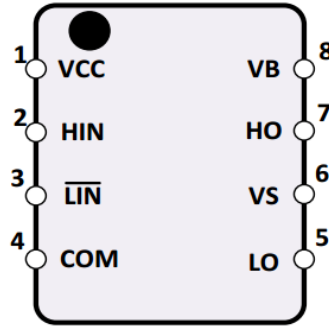
## TYPICAL APPLICATION



## ORDER INFORMATION

| Valid Part Number | Package Type        | Top Code |
|-------------------|---------------------|----------|
| PT5606            | 8-Pin, SOP, 150 MIL | PT5606-S |

## PIN CONFIGURATION



PT5606-S

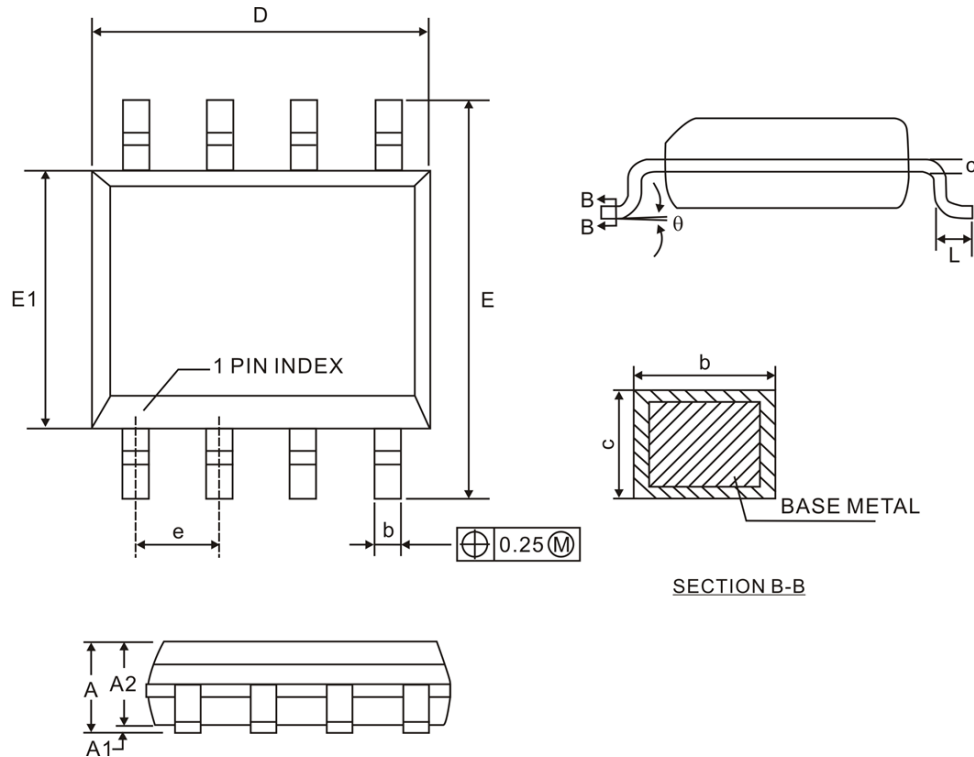
Pin Configuration of PT5606

## PIN DESCRIPTION

| Pin Name                | Description                                                   | Pin No. |
|-------------------------|---------------------------------------------------------------|---------|
| VCC                     | Low-side supply voltage                                       | 1       |
| HIN                     | Logic input for high-side gate driver output(HO), in phase    | 2       |
| $\overline{\text{LIN}}$ | Logic input for low-side gate driver output(LO), out of phase | 3       |
| COM                     | Low-side gate drive return                                    | 4       |
| LO                      | Low-side driver output                                        | 5       |
| VS                      | High voltage floating supply return                           | 6       |
| HO                      | High-side driver output                                       | 7       |
| VB                      | High-side gate drive floating supply                          | 8       |

# PACKAGE INFORMATION

8 PINS, SOP, 150MIL



| Symbol   | Dimension |      |      |
|----------|-----------|------|------|
|          | Min.      | Nom. | Max. |
| A        | 1.35      | 1.60 | 1.77 |
| A1       | 0.08      | 0.15 | 0.28 |
| A2       | 1.20      | 1.40 | 1.65 |
| b        | 0.33      | -    | 0.51 |
| c        | 0.17      | -    | 0.26 |
| e        | 1.27 BSC  |      |      |
| D        | 4.70      | 4.90 | 5.10 |
| E        | 5.80      | 6.00 | 6.20 |
| E1       | 3.70      | 3.90 | 4.10 |
| L        | 0.38      | 0.60 | 1.27 |
| $\theta$ | 0°        | -    | 8°   |

Notes:

1. Refer to JEDEC MS-012 AA
2. Unit: mm