General Description

OB2136 is a monolithic three-phase half-bridge gate driver IC designed for high voltage, high speed, driving MOSFETs and IGBTs operating up to 650V.

OB2136 uses high voltage process and common mode noise canceling technique provides stable operation of high-side drivers under high dV/dt noise circumstance.

The protection functions include over temperature protection, under voltage lockout, inter-lock function and inverter over current trip with an automatic fault-clear function. Over current protection that terminates all six outputs can be derived from an external current sense resistor. An open drain fault signal is provided to indicate that over current or over temperature or under voltage shutdown has occurred. The UVLO circuits prevent malfunction when Vcc or Vbs are lower than the threshold voltage. An enable function is available to shutdown all six outputs.

Output drivers source and sink 600mA and 900mA at least, respectively, which is suitable for three-phase inverter application in motor driver systems.

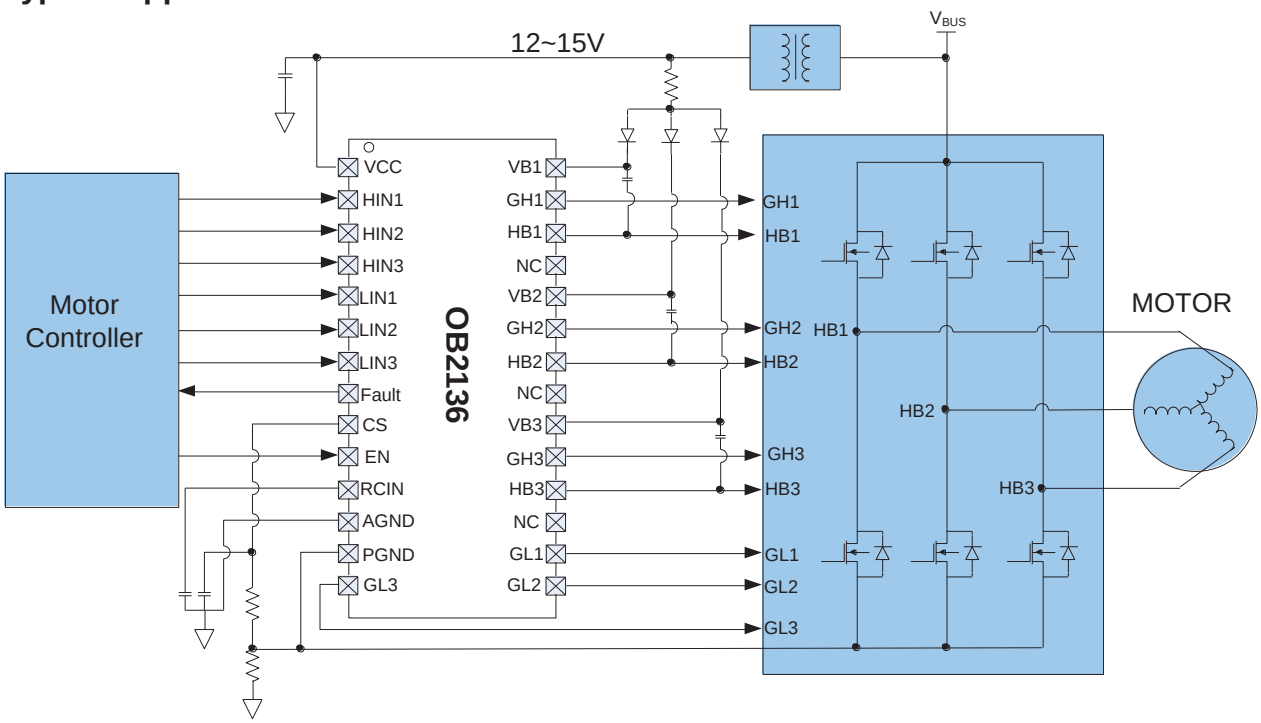
Features

- Floating channel for bootstrap operation up to 650V
- Positive input logic, and 3.3V / 5V input logic compatible
- Enable/ Disable control
- Built-in low-side supply under voltage lockout (UVLO) and over voltage protection (OVP)
- Built-in high side supply under voltage lockout (UVLO)
- Built-in cross conduction prevention logic
- Over current protection (OCP) turns off all six drivers , and soft turn off function
- Built in over temperature protection (OTP) turns off all six drivers
- Fault output indicates OCP, low-side supply UVLO or OTP.
- Adjustable fault-clear timing
- Built-in dead time and matched propagation delay

Applications

- 3-Phase Motor Inveter Driver
- General purpose 3-Phase inverter

Typical Application



GENERAL INFORMATION

Pin Configuration

The pin map is shown as below for SOP28

Ordering Information

Part Number	Description
OB2136CP	SOP28, Halogen-free, Tube
OB2136CPA	SOP28, Halogen-free, T&R

Package Dissipation Rating

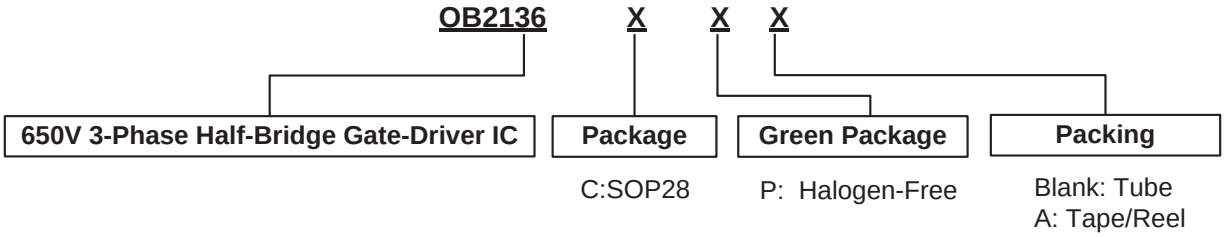
Package	RθJA (℃/W)
SOP28	78

Absolute Maximum Ratings

Symbol	Parameter	Value
V_{CC}	Low-side driver supply voltage	-0.3~25V
V_B	High side floating supply voltage	675V
V_{HB}	High side driver floating supply offset voltage	(VB-25)~(VB+0.3)V
dV_{HB}/dt	Allowable offset supply voltage transient	50V/ns
MCU_IO	MCU general IO input voltage	7V

Note: Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute maximum-rated conditions for extended periods may affect device reliability.

Marking Information



Y:Year Code
WW:Week Code(01-52)
ZZZ:Lot Code
C:SOP28 Package
P:Halogen-free Package
S:Internal Code(Optional)

Pin Description

Pin Num	Pin Name	I/O	Description
1	Vcc	Power	Logic and low-side gate driver power supply voltage
2	HIN1	I	Logic input 1 for high-side gate driver 1
3	HIN2	I	Logic input 2 for high-side gate driver 2
4	HIN3	I	Logic input 3 for high-side gate driver 3
5	LIN1	I	Logic input 1 for low-side gate driver 1
6	LIN2	I	Logic input 2 for low-side gate driver 2
7	LIN3	I	Logic input 3 for low-side gate driver 2
8	/FAULT	O	Fault output with open drain indicates over current or over temperature or low side supply under voltage
9	CS	I	Current sample input for over current shutdown
10	EN	I	Logic input for shutdown functionality
11	RCIN	I	External RC network input used to define fault-clear delay
12	AGND	P	Logic ground
13	PGND	P	Low-side driver return
14	GL3	O	Low-side driver 3 output
15	GL2	O	Low-side driver 2 output
16	GL1	O	Low-side driver 1 output
17,21,25	NC	/	Not connect
18	HB3	O	High side driver 3 floating supply offset voltage
19	GH3	O	High side driver 3 output
20	VB3	I	High side driver 3 floating supply
22	HB2	O	High side driver 2 floating supply offset voltage
23	GH2	O	High side driver 2 output
24	VB2	I	High side driver 2 floating supply
26	HB1	O	High side driver 1 floating supply offset voltage
27	GH1	O	High side driver 1 output
28	VB1	I	High side driver 1 floating supply