HYBRID GATE DRIVER IC FOR IGBT

GH-039

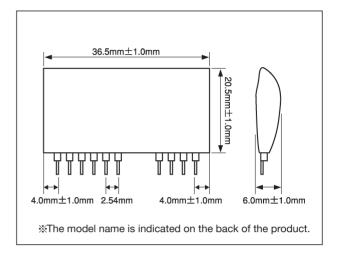






SanRex Hybrid Gate Driver IC for IGBT

- High Voltage isolation by Photo Coupler
- Enable to drive IGBT up to dual 300A module
- Operate with single power source
- Support to high-density system design
- Built-in Photo Coupler input resistor (330 Ω)
- Built-in over current protection circuit with soft shutdown characteristic
- Output terminals on over current detection

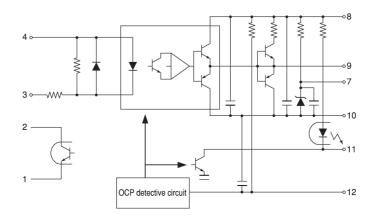


Maximum Ratings

(Unless otherwise Tj=25°C)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Тур.	Max.	Offic
Vcc	Supply Voltage		23.0	26.0	28.0	V
Vон	Forward Bias Output Voltage	Vcc=26.0V	15.4	17.5	18.0	V
V _{RB}	Reverse Bias Supply Voltage	Vcc=26.0V	7.0	8.0	10.0	٧
V _{FIN}	Photo Coupler Input Voltage			5.0	7.0	٧
lF	Photo Coupler Input Current	V _{FIN} =5.0V	9.0	10.0	11.5	mA
lg1	Output Forward Current	PW=2 μ s, Dutycycle < 0.05		4.0	6.0	Α
l _g 2	Output Reverse Current	PW=2 μ s, Dutycycle<0.05		4.0	6.0	Α
t PLH	Switching Time-High side	Vcc=26.0V, IF=10mA			1.5	μs
t PHL	Switching Time-Low side	Vcc=26.0V, I==10mA			1.5	μs
tr	Rise Time	Vcc=26.0V, I==10mA			1.0	μS
tf	Fall Time	Vcc=26.0V, IF=10mA			1.0	μS
Voc	Overcurrent trip level	Vcc=26.0V	11.5	12.0	12.5	V
tocp	OCP delay time	Vcc=26.0V, IF=10mA		4.0	10.0	μs
tpcotf	OCP rise and fall time	Vcc=26.0V, IF=10mA	2.0	5.0		μS
talm	Alarm output delay time	Vcc=26.0V, I==10mA		1.0	5.0	μS
IFO	Fault output current			10.0	17.0	mA
dv/dt	Common Mode Transient immunity		5k	10k		V/ μs
Visc	Input /Output Isolation Voltage	AC50/60Hz, 1minute	AC3750			V
Topr	Operational Ambient Temperature		−25~+ 80			°C
Tstg	Storage Temperature		− 40∼ + 125			$^{\circ}$

Equivalent Circuit

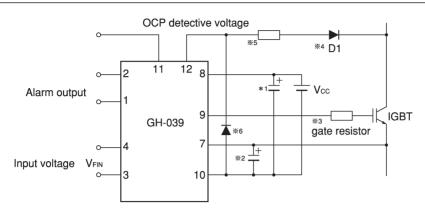




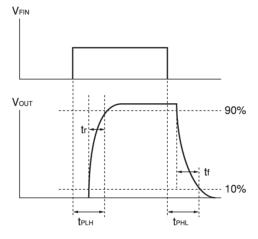




■Example of Application



- %1, %2 To assure required voltage the capacitor $(>10~\mu\text{F})$ has to be connected as close to the Driver IC as possible.
- %3 For the value of gate resistor the resistance value described in IGBT Module specification is recommended. The gate resistance should be determined at less than 6A of peak output current judging from signal delay time and surge voltage.
- %4 For D1 use a fast diode with same blocking voltage as IGBT. Required current capacity is 0.1 to 1.0A, reverse recovery time has to be less than 0.4 μ s.
- %5, %6 To prevent malfunction of detection for over current protection, apply resistor and diode with value around 100 Ω



Definition of over current protection function

