

HYBRID GATE DRIVER IC FOR IGBT

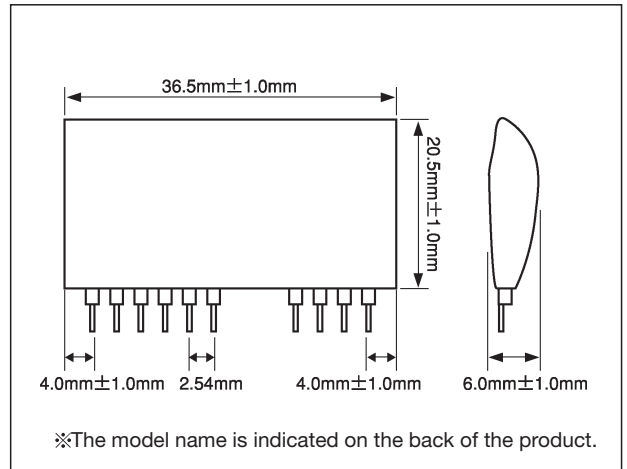
GH-039

TOP



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

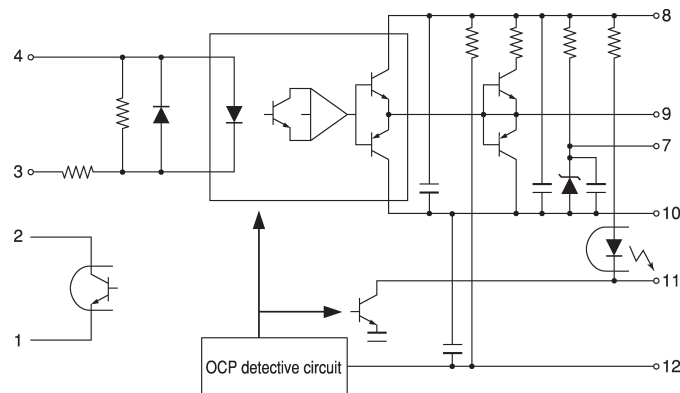


Maximum Ratings

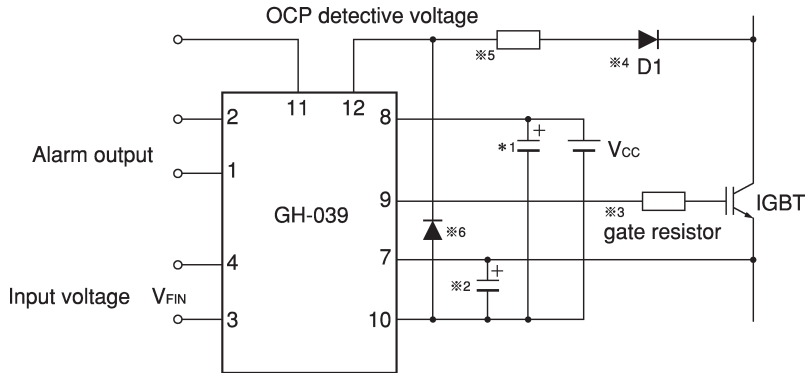
(Unless otherwise Tj=25°C)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
V _{CC}	Supply Voltage		23.0	26.0	28.0	V
V _{OH}	Forward Bias Output Voltage	V _{CC} =26.0V	15.4	17.5	18.0	V
V _{RB}	Reverse Bias Supply Voltage	V _{CC} =26.0V	7.0	8.0	10.0	V
V _{FIN}	Photo Coupler Input Voltage			5.0	7.0	V
I _F	Photo Coupler Input Current	V _{FIN} =5.0V	9.0	10.0	11.5	mA
I _{g1}	Output Forward Current	PW=2 μs, Duty cycle <0.05		4.0	6.0	A
I _{g2}	Output Reverse Current	PW=2 μs, Duty cycle <0.05		4.0	6.0	A
t _{PLH}	Switching Time-High side	V _{CC} =26.0V, I _F =10mA			1.5	μs
t _{PHL}	Switching Time-Low side	V _{CC} =26.0V, I _F =10mA			1.5	μs
t _r	Rise Time	V _{CC} =26.0V, I _F =10mA			1.0	μs
t _f	Fall Time	V _{CC} =26.0V, I _F =10mA			1.0	μs
V _{OC}	Overcurrent trip level	V _{CC} =26.0V	11.5	12.0	12.5	V
t _{OCP}	OCP delay time	V _{CC} =26.0V, I _F =10mA		4.0	10.0	μs
t _{pcotf}	OCP rise and fall time	V _{CC} =26.0V, I _F =10mA	2.0	5.0		μs
t _{ALM}	Alarm output delay time	V _{CC} =26.0V, I _F =10mA		1.0	5.0	μs
I _{FO}	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			°C

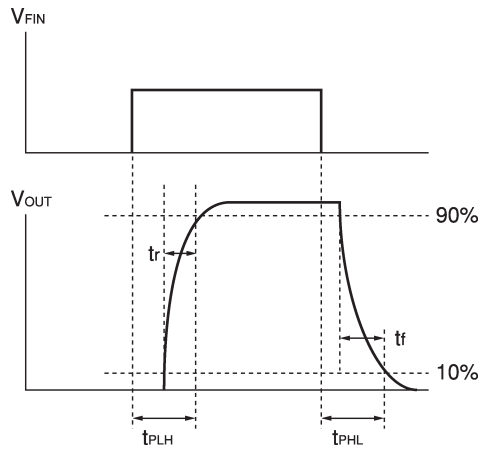
Equivalent Circuit



Example of Application



- ※1, ※2 To assure required voltage the capacitor (>10 μ 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

