

## PrimePACK IGBT DRIVER

Ready to use!!!

### Features

- Dual channel driver
- 4X2 Watt Output Power
- $\pm 35A$  gate current capacity
- Blocking voltage up to 1700V
- IGBT mount Plug & Play solution
- FIBER OPTIC interface
- Extremely reliable & rugged design
- Advance active clamping for over voltage protection.
- Direct & half bridge modes
- Switching frequency up to 100 KHz
- Long service life
- Supply under voltage lockout
- ASIC based driver solution
- Vce monitoring for short circuit protection
- Superior EMC

### Benefits

- On board isolated DC-DC converter
- Interface for 5V logic level
- Common fault feedback signal to interface with controller
- Field configurable dead band & blocking time
- Safe isolation to EN50178, can drive up to 1700V IGBT module
- User selectable Rg(on) & Rg(off)

### Application

- STATCOM
- Traction
- Induction Heating & Melting
- Wind Converter
- High Power rating Power supply

## Technical Specification

### Recommended Operating condition

Power Supply & Monitoring	MIN	TYP	MAX
1. Supply Voltage $V_{cc}$ to GND	: 14.5	15	15.5 V
2. Supply Current $I_{cc}$ (Without Load)	: 50 mA		
3. Under Voltage Monitor, Set Fault	: 11.3	12.0	12.7 V

### Logical Inputs & Outputs

1. Interface Logic level	: 5.0 V logic level
2. Turn-on threshold	: 2.9 V (TYP)
3. Turn off threshold	: 1.8 V (TYP)
4. SOx output, failure Condition	: FIBER OPTIC LIGHT ON - HEALTHY FIBER OPTIC LIGHT OFF - FAULT

### Short-Circuit Protection

1. Vce-monitoring threshold	: 9.3 V
2. Available response time	: 4 $\mu$ Sec (User selectable)
3. Minimum response time	: 1.2 $\mu$ Sec
4. Available blocking time	: 49 mSec (User Selectable)
5. Minimum blocking time	: 9 $\mu$ Sec

### Timing Characteristic (Input to Output of Driver board)

1. Turn-on delay $t_{d(on)}$	: <80 nSec, Max. under No-load
2. Turn-off delay $t_{d(off)}$	: <70 nSec, Max. under No-load

For detail timing information of driver core, refer part specific datasheet.

### Protection Available on driver board

1. Primary Under voltage monitoring.
2. Power supply reverse polarity protection.
3. Advance Active clamping for over voltage protection.
4. Vce monitoring for short circuit protection.
5. Schmitt trigger at the Input stage, highly susceptible to noise.

### Electrical Isolation

Test voltage (50 Hz/1 sec)

1. Primary to secondary side	: 5.0 KV min
2. Secondary to secondary side	: 4.0 KV min

This gate driver is suited for HiPot testing. Nevertheless, it is strongly recommended to limit the testing time to 1s slots as stipulated by EN 50178. Excessive HiPot testing at voltages much higher than  $1200V_{AC(eff)}$  may lead to insulation degradation. No degradation has been observed over 1 min. testing at  $5000V_{AC(eff)}$ . Each driver core production sample shipped to customers has undergone 100% testing at the given value or higher for 1s.

### Output Voltage / Current / Power

1. Turn-on voltage, $V_{GHx}$	: 15.4 V, any load condition
2. Turn-off voltage, $V_{GLx}$	: -10.1 V, No load
3. Turn-off voltage, $V_{GLx}$	: -9.5 V @ 4 W
4. Turn-off voltage, $V_{GLx}$	: -9.3 V @ 6 W
5. Gate Peak Current $I_{out}$	: $\pm 35$ Amp
6. External Gate resistance	: 0.5 $\Omega$ , Minimum
7. Switching frequency F	: 100 KHz
8. Output Power	: 4 W, $T_{amb} < 85^\circ C$ : 6 W, $T_{amb} < 70^\circ C$

### FIBER OPTIC Detail

Rx1 : PWM A

Rx2 : PWM B

Tx1 : COMMON FAULT FOR BOTH CHANNEL

### Interfacing with Control Circuit

1. FIBER OPTIC FAULT OUTPUT  
ERROR/FAULT : +15V, HEALTHY : 0V

### LED Indication

Power ON: GREEN (Normally ON, Off during Fault)  
ERROR : RED (LED for Individual IGBT, ON during Fault)  
ISO. Supply: YELLOW (Normally ON, Off during Fault/Absence of PWM)

### Environmental

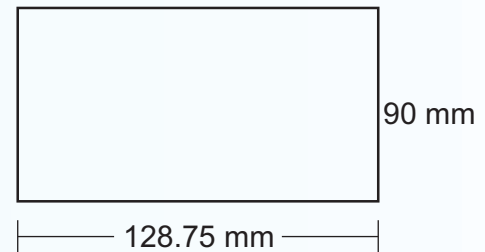
Working temperature	: -40 to 85 $^\circ C$
Storage temperature	: -40 to 90 $^\circ C$

### Mechanical Dimension

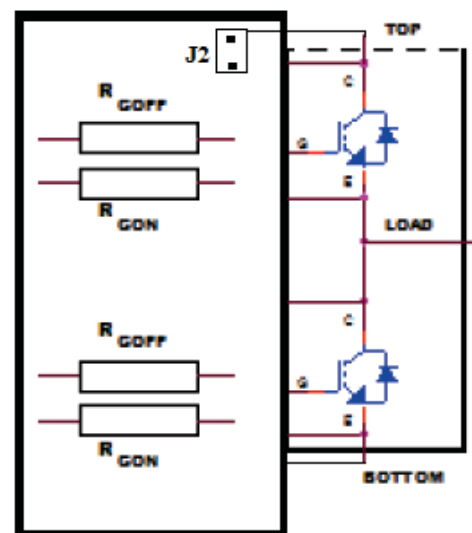
PCB	: 128.75 mm X 90 mm
Mounting Hole	: Direct mount on IGBT GE terminals
Enclosure	: Open Frame
Accessory	: Fibre Optic Cable
Weight	: 0.5 Kg

### Driving Capability

The PrimePACK drives all usual IGBT modules up to 1700 V. Driving power depends on switching frequency so in case of any doubt during selection process pl. contact our sales / technical representative. e.g. IGBT PART Nos: FF600R12IE4 / FF600R12IS4F / FF900R12IE4 / DF650R17IE4 / FD1000R17IE4 / DF1000R17IE4 / FF1400R12IP4 etc.



## ORDERING CODE



**DUAL CHANNEL IGBT DRIVER**