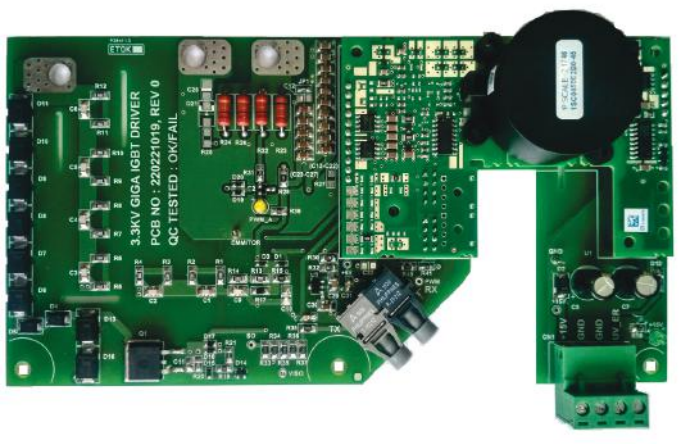
RAM ENTERPRISE

THE POWER SOLUTIONS



GIGA IGBT DRIVER
(Till 6500V IGBT Class)

Excellent Plug & Play solution!!

Features

- 1X8 Watt Direct Mount IGBT driver
- Switching frequency up to 10 KHz
- ±50A gate current, +15V/-9V
- Drive up to 6500V IGBT Module
- Fiber Optical Interface - HFBR15xx/25xx
- Extremely reliable & rugged design
- Integrated short-circuit soft shutdown
- Less than 1 uS delay time
- Less aging effect due to ASIC
- Primary/Secondary side under voltage lockout
- Vce monitoring for short circuit current
- Superior EMI-EMC
- Acknowledge pulse on every Rising/Falling edge
- Advance active clamping for over voltage protection

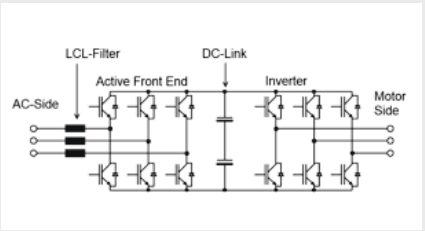
Benefits

- On board isolated DC-DC converter - No need of separate SMPS.
- Interface for 5.0V logic level - Direct compatible with any Controller.
- Primary & secondary fault feedback signal to interface with controller.
- Field configurable blocking time - Flexibility in your hand, use any make IGBT !!
- Safe isolation to IEC 61800-5-1, IEC-60664-1.
- User selectable Rg(on) & Rg(off)

Application

WIND TURBINE

DRIVES



CONVERTER - INVERTER

RAILWAY CONVERTER

INDUCTION HEATING & MELTING

Technical Specification

Recommended Operating condition

Power Supply & Monitoring	MIN	TYP	MAX	
1. Supply Voltage Vcc to GND	14.5	15	15.5	V
2. Supply Current Icc		500 mA		
3. Under Voltage Monitor, Set Fault	11.8	12.0	12.6	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 : 10.2 V
2. Available response time : 7 µSec (R15: 91K)
3. Minimum response time : 5.1 µSec
4. Available blocking time : 8.0 µSec

Timing Characteristic (Input to Output of Driver board)
1. Turn-on delay $t_{d(on)}$: <750 nSec,
2. Turn-off delay $t_{d(off)}$: <200 nSec,
For detail timing information of driver core, refer part specific datasheet.

Protection Available on driver board
1. Primary/Secondary Under voltage monitoring & error feedback.
2. Power supply reverse polarity.
3. Advance active clamping, for IGBT Over Voltage protection.
4. Vce monitoring for short circuit current.
5. Schmitt trigger at the Input stage, highly immune to noise.

Electrical Isolation
Test voltage (50 Hz/1 sec)
Primary to secondary side : 10.2 KV

This gate driver is suited for HiPot testing. Nevertheless, it is strongly recommended to limit the testing time to 1s slots. Excessive HiPot testing at voltages much higher than $3182V_{AC(eff)}$ with 1SC0450E2B0-45 may lead to insulation degradation. No degradation has been observed over 1 min. testing at $10.2KV_{AC(eff)}$ 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} : 15.0 V, any load condition
2. Turn-off voltage, V_{GLx} : -9.5 V, No load
3. Turn-off voltage, V_{GLx} : -9.0 V @ 6W
4. Turn-off voltage, V_{GLx} : -8.8 V @ 8 W
5. Gate Peak Current I_{out} : ±50 Amp
5. Internal Gate resistance : 0.3 Ω Minimum
6. Available Gate resistance : 0.66 Ω (ON), 1.0Ω (OFF)
7. Switching frequency F (Max) : 10 Khz
8. Output Power : 6.0 W, T_{amb} <85 °C
: 8.0 W , T_{amb} <70 °C

Part used on Plug & play driver :1SC0450E2B0-45 from Power Integration
(for more detail, kindly check part specific datasheet from PI)

Environmental
Working temperature : -40 to 85ºC
Storage temperature : -40 to 90 ºC

Driving Capability : INFINEON / MIT / HITACHI /DYNEX
The IHM/ IHV drives all usual IGBT modules up to 6500 V.
power depends on switching frequency so in case of any doubt during selection process please contact.
IGBT PART Nos: FZ1200R33HE3 / FZ1500R33HE3 / FZ1200R45HL3 FZ1500R33HL3 / FZ1200R33KF2C / FZ600R65KE3 / FZ750R65KE3 / 1MSI1800XAEF330 / CM1200HV-66H / DIM1500ESM33-TL000 / MBN1800F33F / MBN1800FH33F / MBN1500FH45F-H

Interfacing with Control Circuit Primary (INPUT) Side:
CN1: 1- +15V, 2,3 - GROUND
CN1:4 - Primary Under Voltage Lockout fault feedback, Open Collector output.

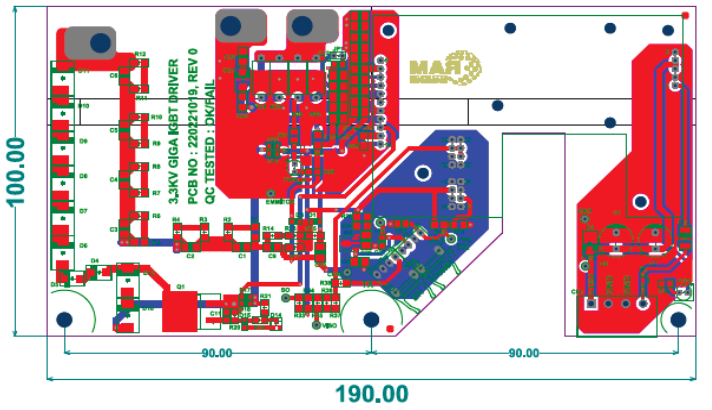
Interfacing with Control Circuit Secondary (OUTPUT) Side:
1. HFBR2521(RX): PWM PULSE INPUT
2. HFBR1521(TX): FAULT ON SECONDARY (OUTPUT) SIDE
a. Due Vce-sat detection
b. Secondary side Under Voltage
c. External Fault

LED Indication
Power ON: GREEN (Normally ON, Off during Fault)
ISO. Supply: YELLOW (Normally ON, Off during Fault/Absence of PWM)

ORDERING CODE - 220221019

GIGA IGBT DRIVER	Description
220221019	8W, 50A, 10 KHz 3300 / 4500V / 6500V FIBER OPTICAL Interface Driver
	Default Gate Resistor: 0.6E Rg(On), 1E Rg(Off)

Mechanical Dimension
PCB : 190 mm X 100 mm
Mounting Hole : As per below Image
Enclosure : Open Frame
Accessory : Electrical - FO converter, FO Cable etc.
Weight : 0.2 Kg



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