RAM ENTERPRISE

THE POWER SOLUTIONS

MEGA MASTER-FOD

PART CODE : 220221025

Excellent Plug & Play solution!!

Features

- 2X4 Watt Compact Dual channel driver
- Switching frequency up to 25 KHz
- ±35A gate current, +15V/-10V
- Drive up to 1700V IGBT Module
- Fiber Optical Interface - HFBR15xx/25xx
- Extremely reliable & rugged design
- Integrated short-circuit soft shutdown
- Direct & half bridge modes
- Less than 1 uS delay time
- Less aging effect due to ASIC
- Primary/Sec. under voltage lockout
- Vce monitoring for short circuit current
- Superior EMI-EMC
- IGBT mount Plug & Play solution
- Advance active clamping for over voltage protection.

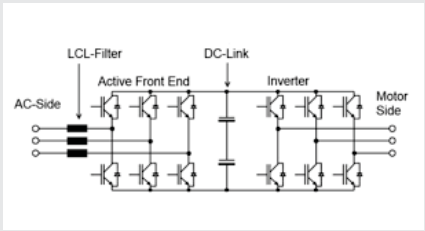
Benefits

- On board isolated DC-DC converter - No need of separate SMPS.
- Interface for 5.0V logic level - Direct compatible with any Controller.
- Common 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 & En50178, protection class II
- User selectable Rg(on) & Rg(off)

Application

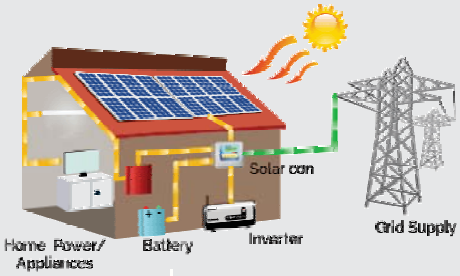
WIND TURBINE

DRIVES



CONVERTER - INVERTER

RAILWAY CONVERTER



SOLAR INVERTER

INDUCTION HEATING & MELTING

"Drive the IGBT with experience hand" **WEB: www.ramenterprise.co.in**

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 (Without Load):	150 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 µSec (User selectable)
3. Minimum response time	: 1.2 µSec
4. Available blocking time	: 49 mSec (User Selectable)
5. Minimum blocking time	: 9 µSec

Timing Characteristic (Input to Output of Driver board)

1. Turn-on delay $t_{d(on)}$	: <250 nSec, Max. under No-load
2. Turn-off delay $t_{d(off)}$	: <300 nSec, Max. under No-load

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.
4. Vce monitoring for short circuit current.
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
2. Secondary to secondary side	: 4.0 KV

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}	: 15.0 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}	: ±35 Amp
5. Internal Gate resistance	: 0.5 Ω
6. External Gate resistance	: Minimum 1 Ω
7. Switching frequency F	: 10 Khz
8. Output Power	: 4.0 W, T_{amb} <85 °C
	: 6.0 W , T_{amb} <70 °C

Part used on Plug & play driver : 2SC0435T2H0-17 from Power Integration
(for more detail, kindly check part specific datasheet from PI)

Mechanical Dimension

PCB	:	150 mm X 120 mm
Mounting Hole	:	140 mm X 110 mm
Enclosure	:	Open Frame
Accessory	:	Electrical - FO converter, FO Cable etc.
Weight	:	0.5 Kg

Environmental

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

Driving Capability : INFINEON / SEMIKRON /FUJI

The PrimePACK drives all usual IGBT modules up to 1700 V. power depends on switching frequency so in case of any doubt during selection process please contact.

IGBT PART Nos: FF600R12KE4 / FF450R12KE4 / FF900R12IE4 / any equivalent

Interfacing with Control Circuit

1. FIBER OPTIC :PWM INPUT Rx1- TOP, Rx2- BOTTOM.
2. ERROR : Tx1: HEALTHY- LIGHT ON, ERROR- LIGHT OFF.

LED Indication

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

ORDERING CODE - 220221025

MEGA MASTER - FOD	Description
220221025	6W, 35A, 10 KHz 1200 / 1700V CLASS IGBT FIBER OPTICAL Interface Driver
	Default Gate Resistor: 10E Rg(On), 10E Rg(Off)

Power Supply:-

CN1(Power Supply): 1-+15V;
2- GND

Accessories: FO CABLE

ORDERING CODE: 220221051-FO-X.XX
: Cable Length e.g 1.0 meter

Wiring details: