V P Electronics
Total Solution of Power Electronics
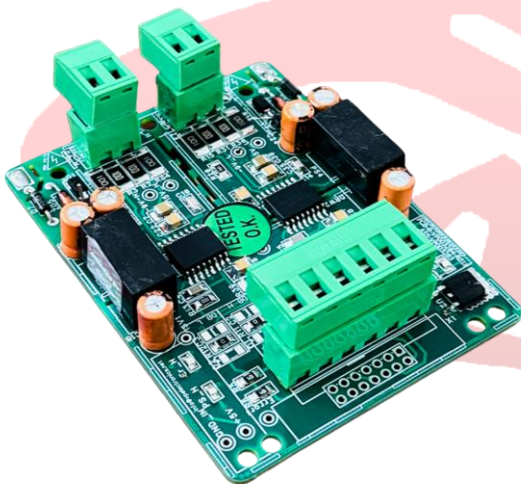
2CHDIG_R_F10 , 2CHDIG_R_C10

FEATURES

- Low Power dual channel driver 2X2.4 Watt Output Power
- 10A Source &Sink gate current.
- +15V/-9V Drive up to 2100V DC IGBT Module
- Soft Turn off
- 4A Internal Active Miller clamp function
- 2.25-V to 5.5-V Input Supply Voltage
- 5.7 K Vrms isolation
- Switching frequency up to 50KHz
- Less than 130 ns propagation delay time
- Primary/Sec. Supply under voltage lockout
- Vce monitoring for short circuit protection
- 200 ns response time fast DESET protection
- **Interlocking when both pulse high**

2CHDIG_R_F10

ADVANTAGE

- **On board isolated DC-DC converter - No need of separate SMPS.**
- **Interface for 3.3V...5 V logic level - Direct compatible with any Controller.**
- **Common fault feedback signal to interface with controller - Avoid Extra component.**
- **Field configurable blocking time - Flexibility in your hand, use any make IGBT !!**
- **User Selectable Rg-on & off**
- **Dead Band Selectable.**

APPLICATIONS

- **Drives**
- **Ballast**
- **Converter – Inverter**
- **UPS**
- **Solar Inverter**
- **Medical X-Ray**

2CHDIG_R_C10

Recommended Power Supply

		MIN	TYP	MAX
•	**Power Supply & Monitoring**			
•	**Supply Voltage Vcc to GND (V)**	: 14.25	15	16.5
•	**Supply Current Icc (With Load)**	: 100mA		

Logical Inputs & Outputs

- **Interface Logic level** : 3 .3 to 5.0 V

- **Error output for Deset and Power Supply Failure.** : Active High (5V 20 ma) for Error and Low(0V) for normal , all Error are open Collector and direct parallel multi Error.

Short-Circuit Protection

- **Vce-monitoring threshold** : 9.2 V (Internally fix)
- **Available response time** : 4.4 µSec (User selectable)
- **Minimum response time** : 1.0 µSec
- **Minimum blocking time** : 1.0 µSec

Timing Characteristic

- **Turn-on delay t** : 185 ns
- **Turn-off delay t** : 185 ns
- **Output rise time t** : 35 ns MAX
- **Output fall time t** : 37 ns MAX
- **Transmission delay of fault state** : 330ns

Protection Available on Driver Board

- **Primary/Secondary Under voltage monitoring.**
- **Power supply, short circuit & reverse polarity protection.**
- **Soft Shut down for Over Voltage protection.**
- **Vce monitoring for short circuit protection**
- **Schmitt trigger at the Input stage, highly susceptible to noise.**
- **Interlocking when both pulse high**

Output Voltage / Current / Power

- **Turn-on voltage, V** : 14.5- 15.5V, any load condition
- **Turn-off voltage, V** : -7 TO - 9 V, No load
- **Gate Peak Current Iout** : +10A source -10A sink
- **Internal Gate resistance** : 0.0Ω
- **External Gate resistance** : 1.5 Ω-10 Ω
- **Switching frequency F** : 50Khz
- **Output Power** : 2.4 W @105°C
- **Gate Average Current Iavg** : 100ma

Electrical Isolation

Test voltage (50 Hz/60 sec)
- **Primary to secondary side** : **5.7 KV**
- **Secondary to secondary side** : **5.7 KV**

Mechanical Dimension (Option 2)

PCB : **87 X 67 mm**
Mounting Hole : **57 X 47 X4.2 mm**
Panel Mounted : **Direct IGBT module mounting**
Enclosure : **Open Frame**
Weight : **0.3 Kg**
Layer : **4 Layer**

Environmental

Working temperature : **-40 to 105 °C**
Storage temperature : **-40 to 90 °C**

Driving Capability   : Any Make

All usual IGBT MODULE up to 1200A /1700V @ 10 KHZ.
Driving power depends on switching frequency so in case of any doubt during selection process please contact us.

Interfacing with Control Circuit

1. **ERROR: High to Low (FLT)**
2. **Power supply monitoring High to Low. (Rdy)**

LED Indication

Power ON: Green (Normally OFF, ON during Power supply fault)
Error : Red (ON DESAT/ IGBT Fault)

Interfacing with Control Circuit

U3-14- Pin input FRC Details:

2:- PWM_H   4 :- PWM_L   3 :- ERROR   8,9 :- +15V
10,11,12 :-   GND   1,5,6,7,13,14 :- NOT USE
OR

CON2-6 Pin Connector

1 :- +15V   4 :- PWM_H
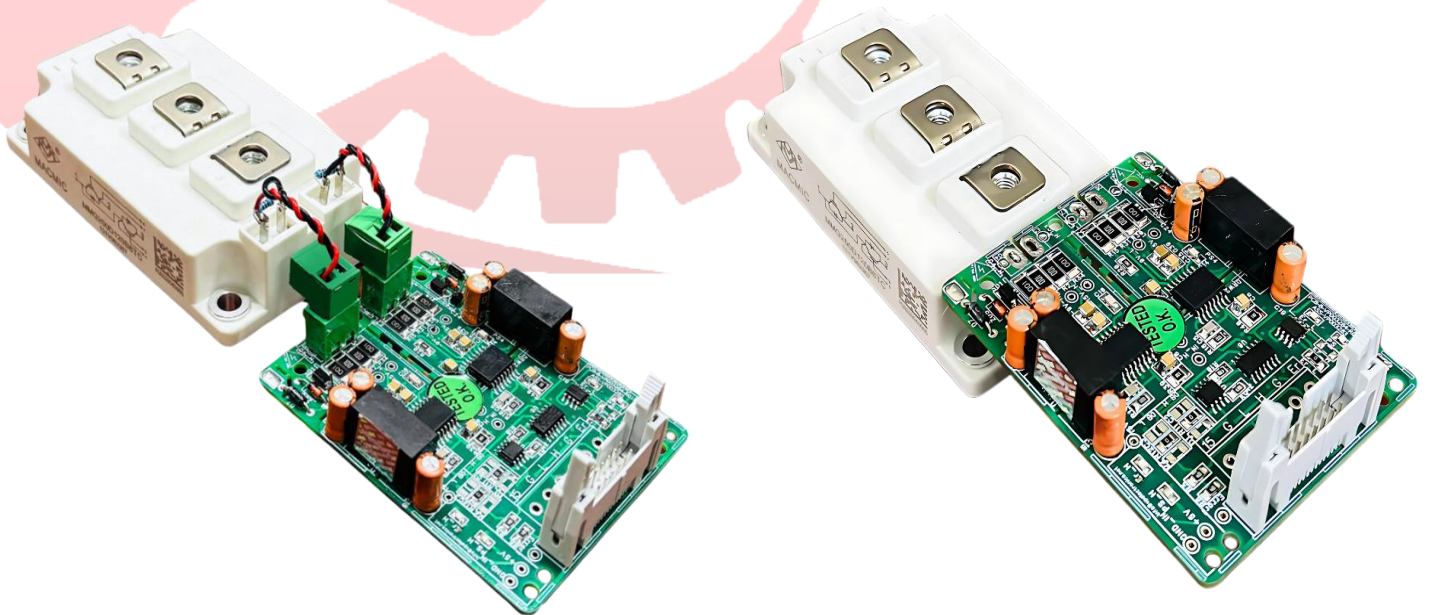2 ,5 :- GND   6 :- ERROR
3 :- PWM_L

Sr.no	IGBT DRIVER	VP PART CODE	REMARKS
1	2CHDIG_R_F10	VP003350	INPUT 16 PIN FRC CONNECTOR
2	2CHDIG_R_C10	VP003364	INPUT 6PINX5.08MM CONNECTOR

	Dead band Selection	
Sr.no	Cap_C2_C3_pf	Dead Band_usec
1	10	1.4
2	22	1.6
3	33	1.8
4	68	2
5	100	2.3
6	220	6
7	330	7.2
8	470	13.2

IGBT GATE DRIVER CURRENT CALCULATION

Ipeak	$\Delta V/(R_g+R_{gint})$
Iavg	Q_g*f_{sw}

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