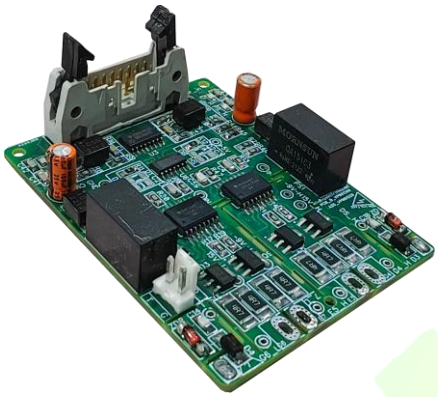
DUAL SIC DRIVER(±10A)



(Dual SIC Drive ±10A)

FEATURES

- Low Power dual channel driver 2X1 Watt Output Power
- 10A source 10A sink gate current.
- +15V/-5V Drive up to 2100V DC SIC Module Short circuit clamping
- Active shut down
- 2A Internal Active Miller clamp function
- 2.25-V to 5.5-V Input Supply Voltage
- 5.7 KVrms isolation
- Switching frequency up to 100 KHz
- 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
- Isolated analog sensor with PWM output for
    1. Temperature sensing with NTC, PTC or thermal diode
    2. High voltage DC-Link or phase voltage

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 SIC !!
- User Selectable Rg-on & off

APPLICATIONS

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

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. : Active Low (0V) for Error and Normal for High (5V)
- failure

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 : -4 TO – 5.5V, 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 : 100Khz
- 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	: 85 X 65 mm
Mounting Hole	: 53.5 X 28.5 X 2 mm
Panel Mounted	: Direct SIC module mounting
Enclosure	: Open Frame
Weight	: 0.3 Kg
Layer	: 4 Layer

Environmental

Working temperature	: -40 to 105 ºC
Storage temperature	: -40 to 90 ºC

Driving Capability : Any Make

All usual SIC-MOSFET up to 400A /1700V.

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 during Under Voltage / 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 **1,5,6,7,13,15 :- NOT USE**

OR

CON2-6 Pin Connector

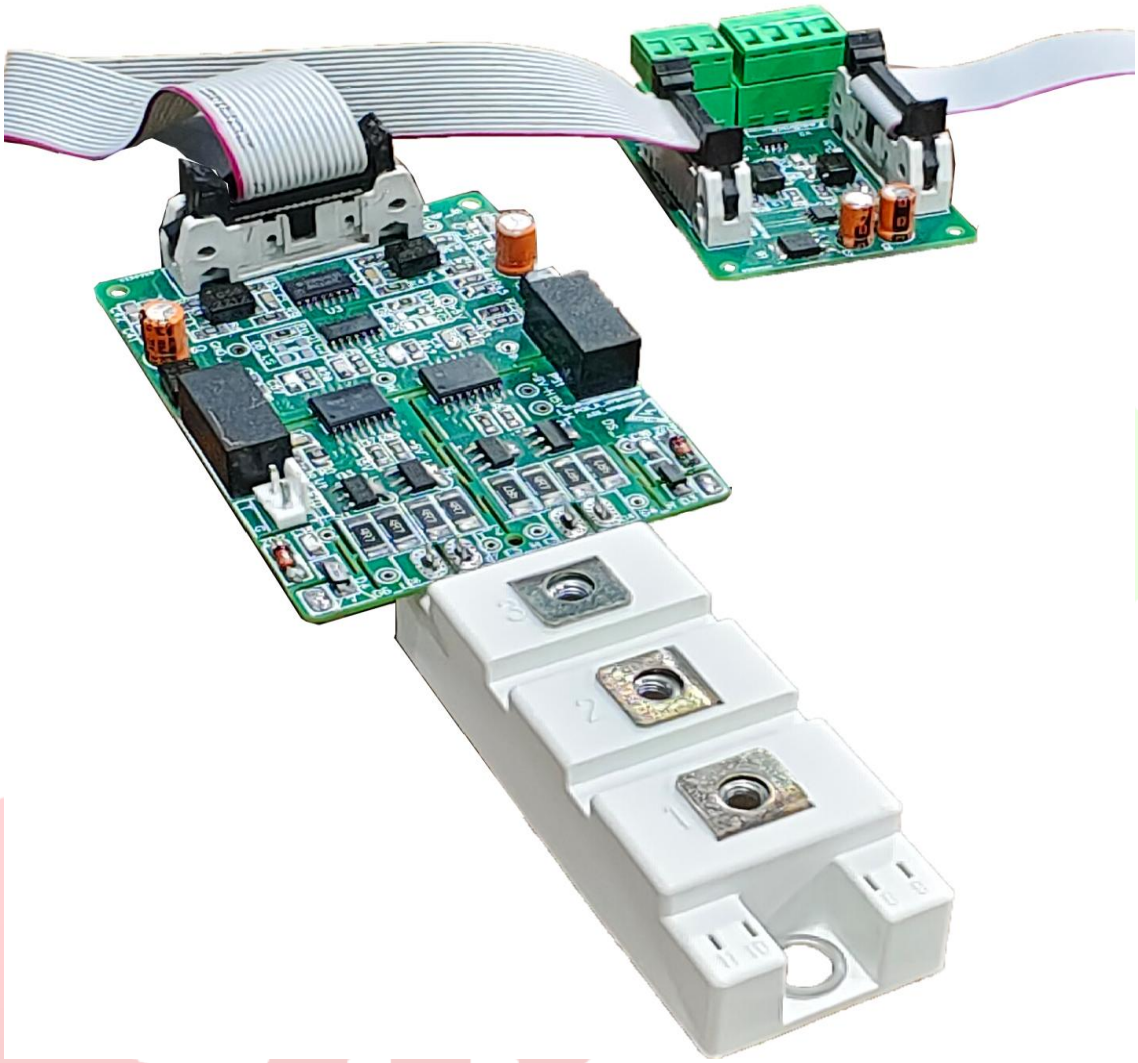
1 :- +15V **5 :- PWM_H**

2 ,4 :- GND **6 :- ERROR**

3 :- PWM_L

Dead Band Tunning

C2 & C3	DEAD BAND TIME (uSec)
47PF	1
100PF	3
220PF	6
330PF	7



SAFETY NOTICE!

ATTENTION PLEASE! THIS DEVICE IS ESD SENSITIVE AND NEEDS TO BE HANDLED WITH CARE. HIGH VOLTAGE CONDITION MAY OCCUR DURING OPERATION OF THE DEVICE, AND HENCE USER IS SOLELY RESPONSIBLE OF EQUIPMENT AND PERSONNEL SAFETY. VP ELECTRONICS SHALL NOT BE HOLD LIABLE FOR ANY DAMAGE TO PERSONNEL AND/OR PROPERTIES AS A RESULT OF USING THIS DEVICE. USER MUST TAKE ADEQUATE STEPS TO ENSURE ELECTRICAL AND MECHANICAL SAFETLY OF THE DEVICE IN USE.

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