

RAM ENTERPRISE

THE POWER SOLUTIONS



PART CODE: 220221051
MINI MASTER FOD 115

IGBT-MOSFET DRIVER
Excellent Plug & Play solution!!

Features

- Dual Channel Parallel Driver
- 4X0.4 Watt Output power (at 105 °C)
- 4X1.2 Watt Output Power (at 70 °C)
- ±15A gate current, +15V/-6V
- Drive up to 1200V IGBT Module
- LED Indication for Pulse Output
- Reliable & rugged design
- SOFT Shut down Function
- Gate clamping
- Switching frequency up to 50 KHz
- Advance active Clamping
- Long service life
- Primary/Sec. Supply under voltage lockout
- ASIC based driver solution
- Vce monitoring for short circuit protection

Benefits

- On board isolated DC-DC converter (4.0KV Isolation)
- Interface for 5 V logic level
- Common fault feedback signal to interface with controller
- Field configurable blocking time
- Programmable dead time generation
- User Selectable Rg

Application

- Uninterrupted Power supply
- Solar converters
- Industrial drives
- Power Supply for Railway
- Servo Stabilizer
- Welding & Plasma cutters
- Medical Equipments
- Electrical / Hybrid vehicle

“Drive the IGBT with experience hand”

WEB: www.ramenterprise.co.in

Technical Specification

Recommended Operating condition

Power Supply & Monitoring	MIN	TYP	MAX
1. Supply Voltage Vcc to GND	14.5	15	15.5
2. Supply Current Icc (Without Load)	130 mA		
3. Under Voltage Monitor, Set Fault	11.3	12.0	12.7

Logical Inputs & Outputs

1. Input Bias Current	: 190 μ A
2. Interface Logic level	: 5 V logic level
3. Turn-on threshold	: 2.9 V
4. Turn off threshold	: 1.8 V
5. SOx output, failure Condition	: FIBER OPTIC LIGHT ON - HEALTHY FIBER OPTIC LIGHT OFF - FAULT

Short-Circuit Protection

1. Vce- monitoring threshold	: 9.3 V (Internally Fix)
2. Available response time	: 4 μ Sec (User selectable)
3. Minimum response time	: 1.2 μ Sec
4. Available blocking time	: 49 mSec (User selectable)
5. Minimum blocking time	: 9 μ Sec

Timing Characteristic (Input to Output of Driver board)

1. Turn-on delay $t_{d(on)}$: <100nS
2. Turn-off delay $t_{d(off)}$: <100nS

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

Protection Available on driver board

1. Primary/Secondary Under voltage monitoring.
2. Power supply reverse polarity protection.
3. Soft Shut down, For Over Voltage protection.
4. Vce monitoring for short circuit protection.
5. Schmitt trigger at the Input stage, highly immune to noise.
6. Gate clamping & Safe Torque operation.

Electrical Isolation

Test voltage (50 Hz/1 sec)

1. Primary to secondary side	: 4.0 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. Excessive HiPot testing at voltages much higher than 850V_{AC(eff)} may lead to insulation degradation. No degradation has been observed over 1 min. testing at 4000V_{AC(eff)}. Each driver core production sample shipped 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}	: -8.5 V, No load
3. Turn-off voltage, V _{GLx}	: -6.6 V @ 1W
4. Gate Peak Current I _{out}	: \pm 15 Amp
5. External Gate resistance	: 2.5 Ω , Minimum for more than 25 KHz : 1.0 Ω , Minimum for Less than 25 KHz
6. Switching frequency F	: 50 KHz
7. Output Power	: 0.4 W, T _{amb} < 105 °C : 1.0 W, T _{amb} < 85 °C : 1.2 W, T _{amb} < 70 °C : 1.4 W, T _{amb} < 55 °C

Part used on plug & play driver : 2SC0115T2A0-12 from Power Integration.

Interfacing with Control Circuit

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

Environmental

Operating temperature	: -20 to 105 °C
Storage temperature	: -40 to 105 °C

Mechanical Dimension

Enclosure	: As per Drawing
Weight	: Open Frame : 0.4 Kg

Driving Capability


: ANY MAKE

The MINI MASTER drives all usual IGBT modules (62mm) up to 600 A /1200 V. Driving power depends on switching frequency so in case of any doubt during selection Pl. contact our sales / technical representative.

LED Indication

Power ON : Green (Normally ON, Off during power supply fault)
ERROR : RED (ON during under voltage/DESAT/ IGBT Fault)
PULSE OUTPUT : TOP_A1, TOP_A2: PWM TOP,
BOT_A1, BOT_A2: PWM BOTTOM

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FIBER OPTIC	Description	Specify X from Table
	2X1.2W, 15A, 50KHZ 1200V	CLASS IGBT DRIVER
Driver will be supplied with 2E Rgon & Rgoff.		
Plug & Play Driver Board		For special requirement pl. specify during ordering.

Interfacing with Control Circuit

- Rx1 : TOP PWM
- Rx2 : BOTTOM PWM
- Tx1 : ERROR OUTPUT
- CN1(Power Supply): 1-+15V; 2- GND

Accessories: FO CABLE



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

