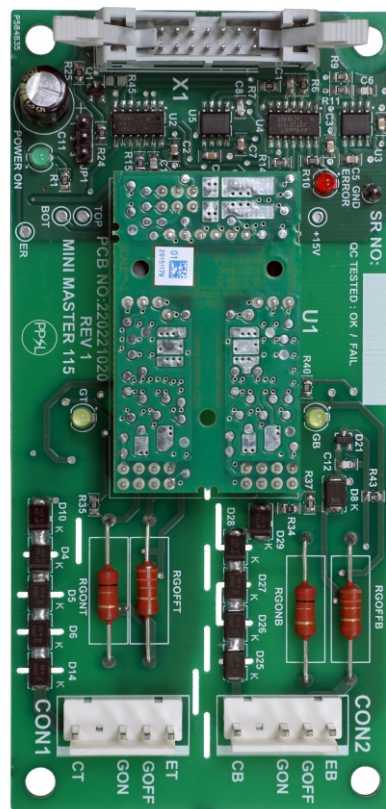
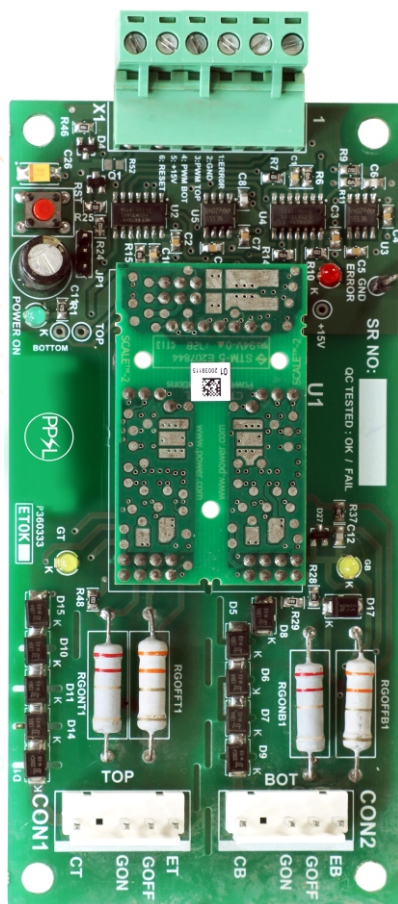


MINI MASTER 115



IGBT DRIVER (ELECTRICAL)

Excellent Plug & Play solution!!



MINI MASTER 115

IGBT MOSFET DRIVER

FEATURES

- 2X1 Watt Compact Dual channel driver
- Switching frequency up to 50 KHz
- 15A gate current, +15V/-6V
- Drive up to 1200V IGBT Module
- Gate Clamping
- Extremely reliable & rugged design
- Integrated short-circuit soft shutdown
- In-built dead band generation
- Advance Active Clamping
- Less aging effect due to ASIC
- Primary/Sec. under voltage lockout
- Vce monitoring for short circuit current
- Long Service Life
- 2x0.4 Watt output Power (at 105 °C)
- 2x0.4 Watt output Power (at 70 °C)
- LED Induction for Pulse Output
- Auto Reset (FRC Version)
- External Reset (MSTB Version)

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 (Without Load)	: 35 mA
3. Under Voltage Monitor, Set Fault	: 11.4 12.0 12.8 V

Logical Inputs & Outputs

1. Input Bias Current	: 190 μ A
2. Interface Logic level	: 12.0 V....15.0 V Logic level
3. Turn-on threshold	: 12.0 V
4. Turn off threshold	: 10.8 V
5. SOx output , failure Condition	: 0.7 V Max., I (SOx)<20 mA total

Short-Circuit Protection

1. Vce-monitoring threshold	: 9.3 V (Internally Fix)
2. Available response time	: 5 μ Sec
3. Minimum response time	: 4.5 μ Sec
4. Available blocking time	: 130 mSec
5. Minimum blocking time (R4)	: 9 μ Sec

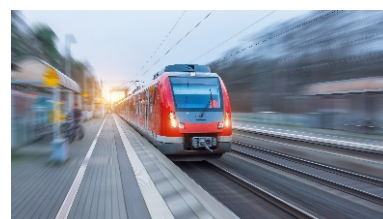
BENEFITS

- On board isolated DC-DC converter.
- Interface 13.0V...15.0V logic level.
- Common fault feedback signal to interface with controller.
- Field configurable blocking time
- Programmable dead time generation
- User selectable Rg(on) & Rg(off)

APPLICATIONS



INDUSTRIAL UPS



Railway Converter



Drives

Timing Characteristic

(Input to Output of Driver board under No-Load)

1. Turn-on delay t_{don} : <300nS
2. Turn-off delay t_{doff} : <300nS
3. Deadband : 4.0 μ Sec

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. Soft Shut down, to avoid IGBT Over Voltage.
4. Vce monitoring for short circuit current.
5. Highly immune to noise.
6. Gate clamping & Safe Torque operation.

Mechanical

Overall Dimensions : 90 x 60 mm

Mounting Dimensions : 80 X 50 mm

Environmental

Working temperature : -20 to 105°C

Storage temperature : -40 to 150 °C

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 as stipulated by EN 50178. Excessive HiPot testing at voltages much higher than 850V may lead to insulation degradation. No degradation has been observed over 1 min. testing at 4000V. 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_{Gth} : 15.0 V, any load condition
2. Turn-off voltage, V_{Glx} : -8.5 V, No load
3. Turn-off voltage, V_{Glx} : -6.6V @ 1W
4. Gate Peak Current I_{out} : ± 15 Amp
5. External Gate resistance : Min 2.5 Ω , at below 25Khz
: Min 1.0 Ω , for above 25Khz,
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

Driving Capability : FUJI / INFINEON / SEMIKRON / DYNEX

The Mini Master 115 drives all usual IGBT modules up to 1400A 1200 V. Power depends on switching frequency so in case of any doubt during selection process please contact.

Interfacing with Control Circuit

Electrical, Output to interface with Controller.

ERROR : : Low to High / High to Low (Site selectable)

LED Indication

Power ON: Green (Normally ON, Off during Power supply fault)

ERROR : RED (ON during Under Voltage / DESAT/ IGBT Fault)

Pulse Output : Yellow (ON during healthy-pulse available)

Interfacing with Control Circuit (INPUT) Detail:

14-PIN Input Pin Detail:

1,5,6,7,13,14 N.C.	2 PWM B	4 PWM A
3 ERROR	8,9 +15V	10,11,12 GND

6-PIN MSTB Pin Detail:

1 ERROR	2,6 GND	4 PWM BOT
3 PWM TOP	5 +15V	

CON1 Detail (TOP):

ET : EMITTER
GOFF/ GON : GATE
CT : COLLECTOR

CON2 Detail (BOTTOM):

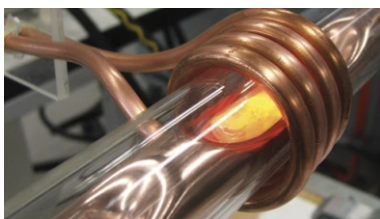
EB : EMITTER
GOFF/ GON : GATE
CB : COLLECTOR



Corona Treater



Power Quality



Induction

APPLICATIONS

ORDERING CODE - 220221020

MINI MASTER 115

Version 1.0





CONTACT US :



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Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

If and to the extent necessary, please forward equivalent notices to your customers.

Changes of this product data sheet are reserved.

Safety Instructions

Prior to installation and operation, all safety notices and warnings and all warning signs attached to the equipment have to be carefully read. Make sure that all warning signs remain in a legible condition and that missing or damaged signs are replaced.

Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.