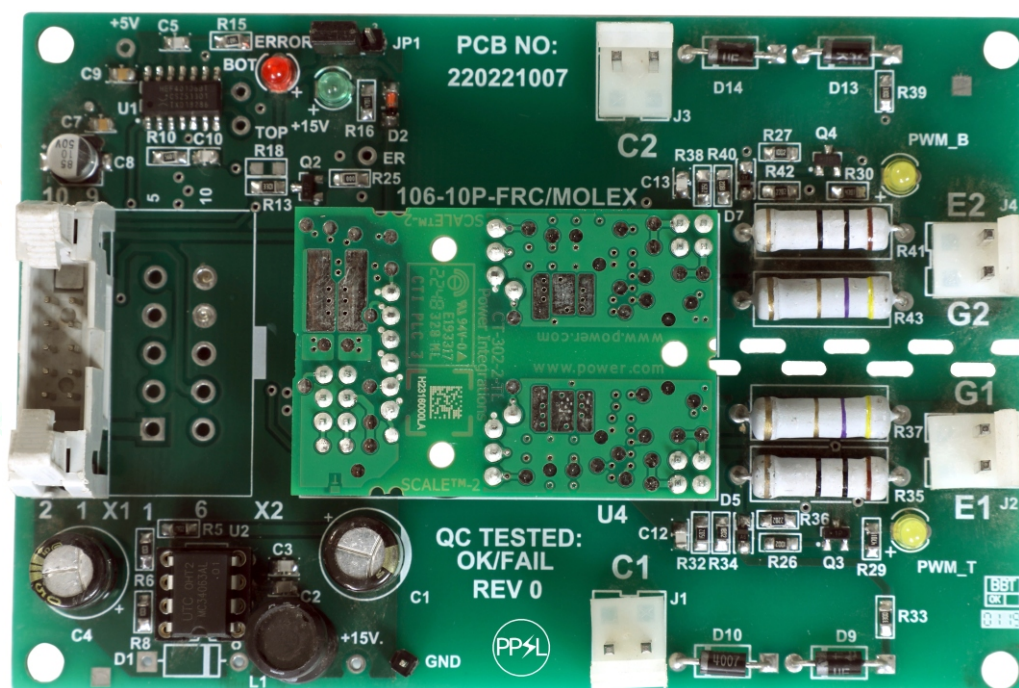


MICRO-FRC / MOLEX



IGBT DRIVER (ELECTRICAL)

Excellent Plug & Play solution!!



MICRO FRC / MOLEX

IGBT DRIVER (Electrical)

FEATURES

- 2X1 Watt Compact Dual channel driver
- Switching frequency up to 50 KHz
- 6A gate current, +15V/-10V
- Drive up to 1200V IGBT Module
- 10-Pin FRC / Molex Electrical Interface
- Extremely reliable & rugged design
- Integrated short-circuit soft shutdown
- Wide Input Power supply range (18-30V)
- 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
- Easy onsite tuning with various make IGBT module.
- Pulse Output Indication

BENEFITS

- On board isolated DC-DC converter.
- Interface 3.3V...15.0V logic level.
- Common fault feedback signal to interface with controller.
- Field configurable blocking time
- Safe isolation to IEC 61800-5-1, IEC-60664-1 & En50178, protection class II
- User selectable Rg(on) & Rg(off)

TECHNICAL SPECIFICATION

Recommended Operating condition

Power Supply & Monitoring	MIN	TYP	MAX
1. Supply Voltage Vcc to GND	: 17.0	20	30.0 V
2. Supply Current Icc (Without Load)	: 80mA	(@49KHz PWM I/P)	
3. Under Voltage Primary, Set Fault	: 13.0	13.8	14.1 V
Clear Fault	: 14.2	14.5	15.0 V
Secondary, Set Fault	: 11.5	12.0	12.5 V
Clear Fault	: 12.1	12.6	13.1 V

Logical Inputs & Outputs

1. Input Bias Current	: 190 μ A
2. Interface Logic level	: 3.3 V...15V
3. Turn-on threshold	: 2.6 V (typ)
4. Turn off threshold	: 1.3 V (typ)
5. SOx output , failure Condition	: 0.7 V Max., I (SOx)<20 mA total

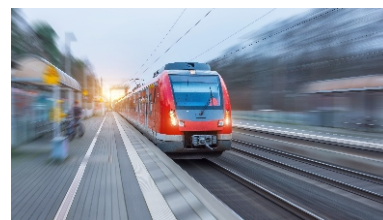
Short-Circuit Protection

	: Diode sense method
1. Vce-monitoring threshold	: 9.3 V (Internally Fix)
Isc Trip adjustment D9, D13	: 1N4734A /UF4007 / MUR1100
2. Response (blanking) time	: 4.5 μ S (C12,C13 : 150pF) - Factory Set
3. Minimum response time	: 1.2 μ S
4. Available blocking time (R7)	: 49 mS (User Selectable 100K)
5. Minimum blocking time (R7)	: 9 μ S (0E)

APPLICATIONS



INDUSTRIAL UPS



Railway Converter



Drives

"Drive the IGBT with experienced hand"

Timing Characteristic

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

1. Turn-on delay $t_{d(on)}$: 1 μ S, Max.
2. Turn-off delay $t_{d(off)}$: 1.2 μ S, Max.

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.

Mechanical

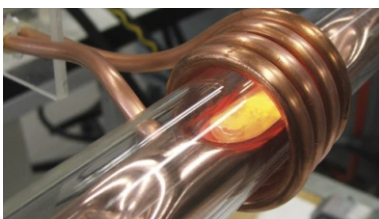
Overall Dimensions : 111.5 x 75 mm
Mounting Dimensions : 104.5 X 68 mm



Corona Treater



Power Quality



Induction

APPLICATIONS

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 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_{CHx} : 15.0 V, any load condition
2. Turn-off voltage, V_{CLx} : -10.0 V, No load
3. Turn-off voltage, V_{CLx} : -8V @ 1W
4. Gate Peak Current I_G : ± 6 Amp
5. Internal Gate resistance : 0.5 Ω
6. External Gate resistance_{out} : Min 2.5 Ω , at below 25Khz,
: Min 5 Ω , for above 25Khz,
7. Switching frequency F : 50 KHz
8. Output Power : 1.0 W, $T_{amb} < 85^\circ C$
: 1.2 W, $T_{amb} < 70^\circ C$
: 0.35 W, $T_{amb} < 105^\circ C$

Environmental

Working temperature : -40 to 105 $^\circ C$
Storage temperature : -40 to 90 $^\circ C$

Driving Capability : DYNEX / FUJI / INFINEON / SEMIKRON

The Micro-FRC/Molex drives all Discrete, 34mm & 62mm usual IGBT modules up to 450A 1200 V. Power depends on switching frequency so in case of any doubt during selection process please contact PPSL technical person.

Interfacing with Control Circuit

Electrical

ERROR :: Low to High (factory set) / High to Low

LED Indication

Power ON: Green (Normally ON, Off during Power supply fault)
PWM_T, PWM_B: YELLOW (ON : Pulse available, OFF : absent)
ERROR : RED (ON during Under Voltage / DESAT/ IGBT Fault)

Interfacing with Control Circuit (INPUT) Detail:

10-PIN Input FRC/ MOLEX Pin Detail:

1 +24V	3 PWM BOT	7 PWM TOP
2 ERROR	5,6 NC	4,8,9,10 GND

ORDERING CODE - 220221007

MICRO - FRC / MOLEX

Version 1.0





CONTACT US :



PARAMVIR POWER SOLUTIONS LLP

Plot No. B/128, GIDC Estate, Sector-25, Gandhinagar - 382024. Gujarat, INDIA.



+91 98790 35433



sales@paramvirpower.com



www.paramvirpower.com

“All Product names, logos, and brands are property of their respective owners. All company, product and service names used in this catalog are for identification purposes only. Use of these names, logos, and brands does not imply endorsement.”

Terms & Conditions of usage

The data contained in this product data sheet is exclusively intended for technically trained staff. Technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application.

This product data sheet is describing the characteristics of this product for which a warranty is granted. Any such warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its characteristics.

Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of our product, please contact the sales office, which is responsible for you (see www.paramvirpower.com). For those that are specifically interested we may provide application notes.

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.