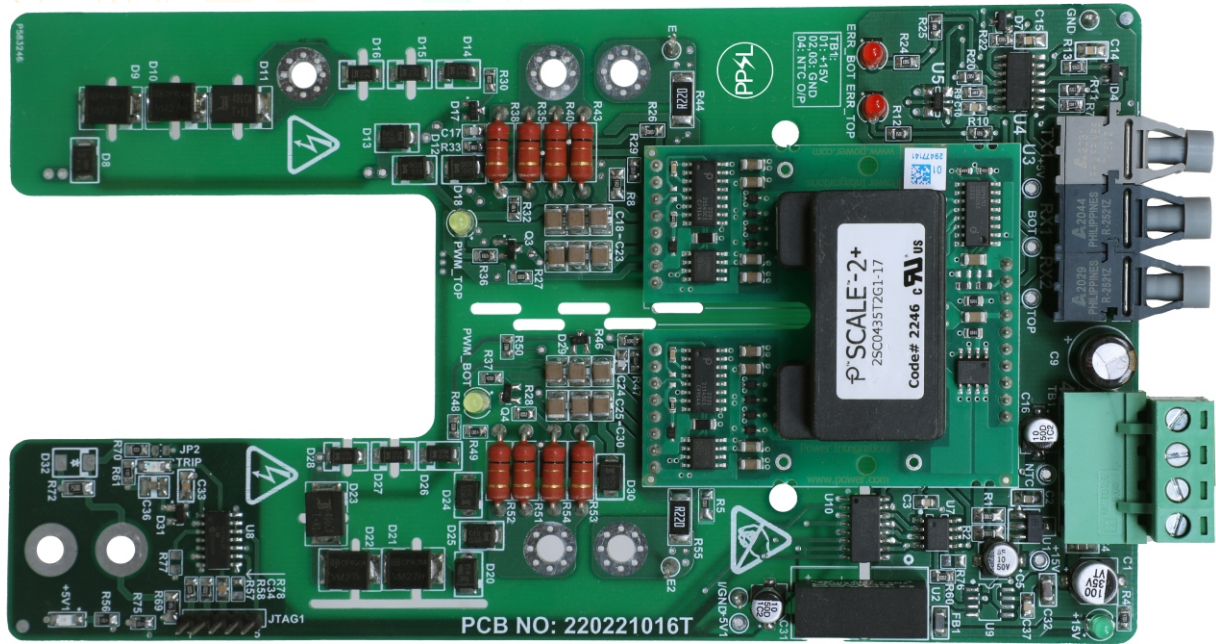


MEGA PRIME PACK FO



IGBT DRIVER (FIBER OPTIC)

Excellent Plug & Play solution!!



MEGA PRIME PACK FO

IGBT DRIVER (Fiber Optic)

FEATURES

- 2X4 Watt Compact Dual channel driver
- Switching frequency up to 20 KHz
- 35A gate current, +15V/-10V
- Drive up to 1700V IGBT Module
- Fiber Optical Interface - HFBR15xx/25xx
- Extremely reliable & rugged design
- Integrated short-circuit soft shutdown
- Direct & half bridge modes
- 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 with accurate Thermal (NTC) feedback
- IGBT mount Plug & Play solution
- Advance active clamping for over voltage protection.

BENEFITS

- On board isolated DC-DC converter
- Interface for 5.0 V logic level
- Individual 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	: 14.5 15 15.5 V
2. Supply Current Icc (Without Load)	: 100mA
3. Under Voltage Primary, Set Fault	: 11.3 12.0 12.7 V
Clear Fault	: 11.9 12.6 13.3 V
Secondary, Set Fault	: 11.5 12.0 12.5 V
Clear Fault	: 12.1 12.6 13.1 V

Logical Inputs & Outputs

1. Interface Logic level	: 5.0 V logic level
2. Turn-on threshold	: 2.9 V (typ)
3. Turn off threshold	: 1.8 V (typ)
4. SOx output , failure Condition	: FO LIGHT ON - HEALTHY FO LIGHT OFF - FAULT

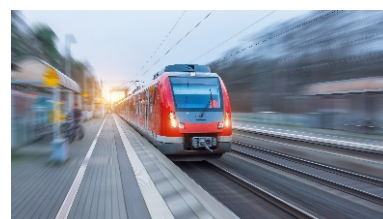
Short-Circuit Protection

	: Diode sense method
1. Vce-monitoring threshold	: 9.3 V (Default factory set)
Isc Trip adjustment R5, R8	: 33K (Vce: 3.95 V)
2. Response (blanking) time	: 4.5µS (C17,C24: 150pF) - Factory Set
3. Minimum response time	: 1.2 µS
4. Available blocking time (R6)	: 49 mS (User Selectable 100K)
5. Minimum blocking time (R6)	: 9 µS (0E)

APPLICATIONS



Green Energy



Railway Converter



Drives

“Drive the IGBT with experienced hand”

Timing Characteristic

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

1. Turn-on delay $t_{d(on)}$: 80 nS, Max.
2. Turn-off delay $t_{d(off)}$: 100 nS, 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. Advance active clamping, For IGBT Over Voltage.
4. Vce monitoring for short circuit current.
5. Highly immune to noise.

LED Indication

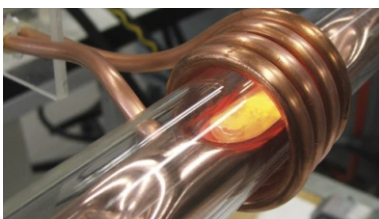
Power ON: +5V1,+15V Green (Healthy: ON, Fault: OFF)
 PWM_TOP, PWM_BOT: Yellow ON - Healthy
 ERR_TOP, ERR_BOT: RED ON - FAULT, OFF- HEALTHY



Defence



Power Quality



Induction

APPLICATIONS

Electrical Isolation

Test voltage (50 Hz/1 sec)

1. Primary to secondary side : 5.0 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_{GLx} : -10.1 V, No load
3. Turn-off voltage, V_{GLx} : -9.5 V @ 4 W
4. Turn-off voltage, V_{GLx} : -9.3 V @ 6 W
5. Gate Peak Current I_{out} : ± 35 Amp
5. Internal Gate resistance : 0.5 Ω
6. External Gate resistance : Minimum 1 Ω
7. Switching frequency F : 20 KHz
8. Output Power : 4.0 W, $T_{amb} < 85^\circ C$
: 6.0 W, $T_{amb} < 70^\circ C$

Environmental

Working temperature : -40 to 85°C
 Storage temperature : -40 to 90 °C

Driving Capability : FUJI / INFINEON / SEMIKRON/ DYNEX

The PrimePACK-FO drives all Primepack IGBT modules up to 1700 V. Power depends on switching frequency so in case of any doubt during selection process please contact. IGBT MPN: FF600R12IE4 / FF600R12IS4F / FF900R12IE4 / DF650R17IE4 / FD1000R17IE4 / DF1000R17IE4 / FF1400R12IP4/ SKM1400GB12P4/ SKM1400GB17R8/ SKM1000GB17R8/ 2MBI900XXA120-50/ 2MI1200XXE120-50/ 2MBI900XXA170-50/ 2MI1200XXE170-50/ 2MBI1000XXB170-50/ 2MI1400XXB170-50/ 2MI1400XXB120-50/FF1800R17IP5/2MBI1800XXF170-50 etc.

Interfacing with Control Circuit

Tx1 : FAULT OUTPUT
 Rx1, Rx2 : PWM TOP & BOTTOM SEQUENCE
 ERROR : LIGHT ON - HEALTHY, OFF - FAULT

Mechanical Dimensions : Direct Mount on IGBT

Ordering Information: 220221016X

- X - : Without Thermal Feedback
 X - T : WITH THERMAL FEEDBACK (NTC)

ORDERING CODE - 2202210016X

MEGA PRIME PACK FO

Version 1.0



e.g. 220221016 standard Part without thermal feedback.



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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.