



PCB CODE: 220221017 TINY MASTER

IGBT-MOSFET DRIVER
Excellent Plug & Play solution!!

Features

- Low Power dual channel driver
- 2X1 Watt Output Power
- $\pm 8A$ gate current, +15V/-7V
- Drive up to 1200V IGBT Module
- Active Miller clamp function
- Switching frequency up to 50 KHz
- Less than 300 ns delay time
- Primary/Sec. Supply under voltage lockout
- Photocoupler TLP5214 based driver solution
- Vce monitoring for short circuit protection

Benefits

- 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 IGBT !!
- 2500V Safe isolation
- User Selectable Rg-on & off

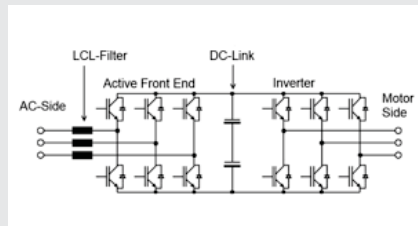
Application



BALLAST



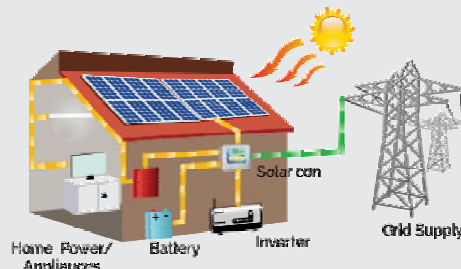
Industrial Drives & Control DRIVES



CONVERTER - INVERTER



UPS



SOLAR INVERTER



MEDICAL-X RAY

Technical Specification

THE POWER SOLUTIONS

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)	: 50 mA		
3. Under Voltage Monitor, Set Fault	: 10.5	11.6	13.5 V

Logical Inputs & Outputs

1. Input Bias Current	: 400 μ A (Max)
2. Interface Logic level	: 5.0 V logic level
3. Turn-on threshold	: 3.5V
4. Turn off threshold	: 1.5 V
5. SOx output, failure Condition	: 0.7 V Max., I(Sox) <20 mA total

Short-Circuit Protection

1. Vce-monitoring threshold	: 6.5V (Reference)
2. Available response time	: 5.0 μ Sec (Max)
3. Minimum response time	: 1.0 μ Sec
4. Minimum blocking time	: 1.0 μ Sec

Timing Characteristic

1. Turn-on delay $t_{d(on)}$: 150 ns
2. Turn-off delay $t_{d(off)}$: 150 ns
3. Output rise time $t_{r(out)}$: 100 ns
4. Output fall time $t_{f(out)}$: 50 ns
5. Transmission delay of fault state	: 500ns

Protection Available on driver board

1. Primary/Secondary Under voltage monitoring.
2. Power supply reverse polarity protection.
3. Vce monitoring for short circuit protection.
5. Schmitt trigger at the Input stage, highly immune to noise.

Electrical Isolation

Test voltage (50 Hz/60 sec)	
1. Primary to secondary side	: 2.5 KV
2. Secondary to secondary side	: 2.5 KV

Output Voltage / Current / Power

1. Turn-on voltage, V_{GHx}	: 14.5 V, any load condition
2. Turn-off voltage, V_{GLx}	: -7.6 V, No load
3. Turn-off voltage, V_{GLx}	: -7.2 V @ 1 W
4. Gate Peak Current I_{out}	: \pm 8 Amp
5. Internal Gate resistance	: 0.0 Ω
6. External Gate resistance	: 2.5 Ω , Minimum
7. Switching frequency F	: 50 Khz
8. Output Power	: 1W, T_{amb} <70 $^{\circ}$ C

Mechanical Dimension

PCB	: 80 X 45 mm
Mounting Hole	: Vertical mounting - PCB mounted
Enclosure	: Open Frame
Weight	: 0.3 Kg

Environmental

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

Driving Capability : ANY MAKE

All usual IGBT modules up to 200 A /1200 V or 300 A/600V.
Driving power depends on switching frequency so in case of any doubt during selection process pl. contact us.


Interfacing with Control Circuit

1. Electrical
ERROR : High to Low / Low to High - Jumper JP1 selection.

LED Indication

Power ON: Green (Normally ON, Off during Power supply fault)
ERROR : RED (ON during Under Voltage / DESAT/ IGBT Fault)

ORDERING CODE - 220221017

TINY MASTER	PCB MOUNT
	1W, 8A, 50KHz 1200V CLASS IGBT DRIVER 14-PIN FRC Electrical Interface
	Default Gate Resistor: 10E

Interfacing with Control Circuit

14-PIN Input FRC Pin Detail:

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

ACCESSORY



Secondary with IGBT:-

J1 Pin detail (OUTPUT)

1,2	C1
3,4	NC
7,8	E1
9,10	G1

J2 Pin detail (OUTPUT)

1,2	C2
3,4	NC
7,8	E2
9,10	G2

MECHANICAL DIMENSION:

