



2AP0106-ME

**Direct Mounting
on IGBT (ECONO DUAL)**

IGBT DRIVER
Ready to use!!!

Features

- Low Power dual channel driver
- Direct Mounting on IGBT
- $\pm 6A$ gate current, $+15V/-10V$
- Drive up to 1200V IGBT Module
- Compact Plug & Play solution
- Standard Electrical interface
- Reliable & rugged design
- SOFT Shut down Function
- Gate clamping & Safe Torque Operation
- Switching frequency up to 50 KHz
- Less than 1 μS delay time
- Long service life
- Primary/Sec. Supply under voltage lockout
- ASIC based driver solution
- Vce monitoring for short circuit protection
- Superior EMC

Benefits

- On board isolated DC-DC converter
- Interface for 3.3V...15 V 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
- NTC Feedback for IGBT Chip temperature

Application

- Uninterrupted Power supply
- solar converters
- Industrial drives
- Electric / hybrid drive commercial vehicles
- Servo Stabilizer

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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	: 11.3	12.0	12.7 V

Logical Inputs & Outputs

1. Input Bias Current	: 190 μ A
2. Interface Logic level	: 3.3 V..... 15.0 V logic level
3. Turn-on threshold	: 2.6 V
4. Turn off threshold	: 1.3 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	: 4.5 μ Sec (User selectable R18, R19)
3. Minimum response time	: 4.5 μ Sec
4. Available blocking time	: 49 mSec (User Selectable R7)
5. Minimum blocking time	: 9 μ Sec

Timing Characteristic (Input to Output of Driver board)

1. Turn-on delay $t_{d(on)}$: 900 nSec, Max. under No-load
2. Turn-off delay $t_{d(off)}$: 900 nSec, Max. under No-load

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 susceptible 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 2500V_{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}	: -9.9 V, No load
3. Turn-off voltage, V _{GLx}	: -8.0 V @ 1 W
4. Gate Peak Current I _{out}	: \pm 6 Amp
5. Internal Gate resistance	: 0.5 Ω
6. External Gate resistance	: 2.5 Ω , Minimum
7. Switching frequency F	: 20 Khz / 50 Khz
8. Output Power	: 0.9 W, T _{amb} < 85 °C
	: 1.0 W, T _{amb} < 70 °C

Interfacing with Control Circuit

1. Electrical
ERROR : Low to High / High to Low (Site selectable)

LED Indication

Power ON: Green (Normally ON, Off during fault)
ERROR : RED (ON during Fault)

Environmental

Working temperature	: -40 to 105 °C
Storage temperature	: -40 to 90 °C

Mechanical Dimension

PCB	: 100 mm X 62 mm
Mounting Hole	: 94.5 mm X 57.5 mm
Enclosure	: Open Frame
Weight	: 0.3 Kg

Driving Capability

The 2SC0106T drives all usual IGBT modules up to 600 A /1200 V. Driving power depends on switching frequency so in case of any doubt during selection process pl. contact our sales / technical representative.

ORDERING CODE

Model	from Table
2 A P 01 06 - ME	
	Driver will be supplied with 10E Rg. (gate resistor) For special requirement pl. specify during ordering. STANDARD PART will be 2AP0106-ME

Interfacing with Control Circuit

P1 : 2 PIN Connector for NTC Feedback from IGBT Chip FRC Pin detail

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