

## 2AP0435-ME

(For EconoDual IGBT)

Ready to use!!!

### Features

- Dual channel driver
- 4X2 Watt Output Power
- $\pm 35A$  gate current capacity
- Blocking voltage up to 1700V
- IGBT mount Plug & Play solution
- Electric interface
- Extremely reliable & rugged design
- Advance active clamping for over voltage protection.
- Direct & half bridge modes
- Switching frequency up to 10 KHz
- Long service life
- 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 12-15 V logic level
- Common fault feedback signal to interface with controller
- Field configurable dead band & blocking time
- Safe isolation to IEC61800-5-1, IEC60664-1 & EN50178, can drive up to 1700V IGBT module
- User selectable Rg(on) & Rg(off)

### Application

- STATCOM
- Traction
- Induction Heating & Melting
- Wind Converter
- High Power rating Power supply

2AP0435-ME

## 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):	90 mA		
3. Under Voltage Monitor, Set Fault	: 11.3	12.0	12.7 V
Secondary Fault	: 11.3	11.8	12.3 V
Clear Fault	: 11.9	12.4	12.9 V

### Logical Inputs & Outputs

1. Interface Logic level	: 12.0 to 15.0 V logic level
2. Turn-on threshold	: 12.0 V (TYP)
3. Turn off threshold	: 10.7 V (TYP)
4. SOx output , failure Condition	: 0.7 Vmax, I (SOx) < 20 mA total

### Short-Circuit Protection

1. Vce-monitoring threshold	: 4.95 V
2. Available response time	: 3.5 µSec (User selectable)
3. Minimum response time	: 1.2 µSec
4. Available blocking time	: 49 mSec (User Selectable)
5. Minimum blocking time	: 9 µSec

### Timing Characteristic (Input to Output of Driver board)

1. Turn-on delay t <sub>d(on)</sub>	: 916 nS, Max. under No-load
2. Turn-off delay t <sub>d(off)</sub>	: 816 nS, Max. under No-load

For detail timing information of driver core, refer part 2SC0435T2H0-17 datasheet.

### Protection Available on driver board

1. Primary Under voltage monitoring.
2. Power supply reverse polarity protection.
3. Advance Active clamping for over voltage protection.
4. Vce monitoring for short circuit protection.
5. Schmitt trigger at the Input stage, highly susceptible to noise
6. Interfacing with user's control circuit via EXTRST pin so fault latching is possible.
7. IGBT's NTC connection incorporated on board.

### Electrical Isolation

Test voltage (50 Hz/1 sec)

1. Primary to secondary side	: 4.0 KV min
2. Secondary to secondary side	: 4.0 KV min

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<sub>AC(eff)</sub> may lead to insulation degradation. No degradation has been observed over 1 min. testing at 5000V<sub>AC(eff)</sub>. 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 <sub>Gthx</sub>	: 15.4 V, any load condition
2. Turn-off voltage, V <sub>glx</sub>	: -10.1 V, No load
3. Turn-off voltage, V <sub>GLx</sub>	: -9.5 V @ 4 W
4. Turn-off voltage, V <sub>GLx</sub>	: -9.3 V @ 6 W
5. Gate Peak Current I <sub>out</sub>	: ±35 Amp
6. External Gate resistance	: 0.5 Ω (Internal), Minimum 1Ω
7. Switching frequency F	: 10 KHz
8. Output Power	: 4 W, T <sub>amb</sub> < 85 °C
	: 6 W, T <sub>amb</sub> < 70 °C

### Input FRC Detail

Pin No.: 1,5,7	N.C.	6	EXTRST
2	PWM B	8,9	+15V
4	PWMA	10,11,12	GND
3	ERROR	13, 14	NTC

### Interfacing with Control Circuit

Electrical  
ERROR/FAULT : +15V, HEALTHY : 0V

### LED Indication

Power ON: GREEN (Normally ON, Off during Fault)  
ERROR: RED (LED for Individual IGBT, ON during Fault)  
ISO. Supply: YELLOW (Normally ON, Off during Fault/Absence of PWM)

### Environmental

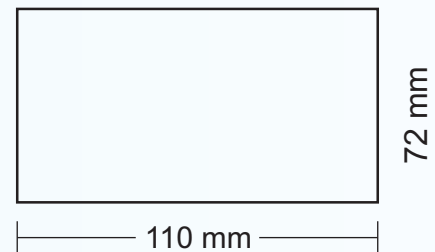
Working temperature : -40 to 85 °C  
Storage temperature : -40 to 90 °C

### Mechanical Dimension

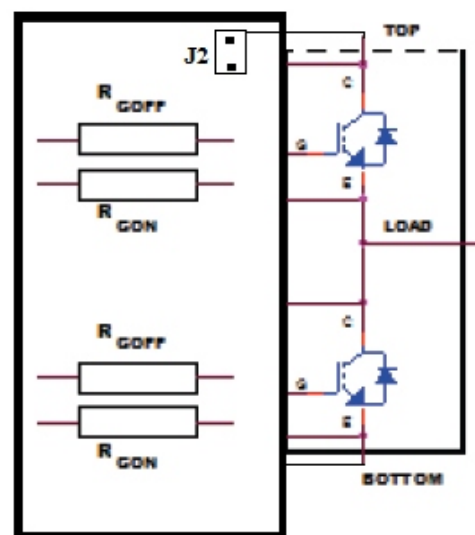
PCB : 110 mm X 72 mm  
Mounting Hole : Direct mount on IGBT GE terminals  
Enclosure : Open Frame  
Accessory : 14 pin FRC Cable  
Weight : 0.5 Kg

### Driving Capability

The 2AP0435-ME drives all EconoDual IGBT modules upto 900A, 1700 V. Driving power depends on switching frequency so in case of any doubt during selection process pl. contact our sales / technical representative.



## ORDERING CODE



**DUAL CHANNEL  
IGBT DRIVER**