

## IGBT Modules

## Power Cycling with the latest generation IGBT die

The Dynex manufacturing plant is a vertically integrated facility with device design, wafer fabrication, packaging, qualification and testing available on site.

The range of power modules includes half bridge, chopper, dual, single and bi-directional switch configurations covering voltages from 1200 V to 6500 V and currents from 250A to 3600A.

Through initial concept to full production, Dynex support customer requirements to provide enhanced and reliable device outlines to meet specific demands.

Using our in-house design team, Dynex continue to develop processes and designs to utilise the latest techniques to improve cooling, current output, lifetime and reliability.

Great emphasis is placed on low inductance power bus bar designs, enabling the modules to function under fast switching transients such as, those of next generation Trench Gate IGBT's and SiC MOSFET.

Modules are available utilising chips that have been optimised for switching or static losses depending on the application.

## Key Features

(Module Dependant)

- High DC stability via advanced edge termination design and passivation
- High short circuit capability wide SCSOA
- Self-limiting short circuit current
- Trench gate generation 5 IGBT
- Temperature conditions from -40/ $-50^{\circ} \mathrm{C}$ to $+150^{\circ} \mathrm{C}$
- Low switching losses
- $\mathrm{T}(\mathrm{vj} \mathrm{op})=150^{\circ} \mathrm{C}$
- AISiC Baseplate for increased thermal cycling capability
- Package design with CTI > 600
- Isolated base plate
- High isolation voltage available


## Applications

- High reliability inverters
- Motor controllers
- Traction drives
- High power converters
- Renewable energy power conversion
- Power charging equipment
- High reliability inverters
- Different circuit topologies (half bridge, single switch, chopper)
- Electric vehicles

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## Module Outlines and Circuit Configurations

All dimensions shown in mm unless stated otherwise.

## Package Type: D



C1 and C2 - Aux Collector
E1 and E2 - Aux Emitter
$\mathrm{G}^{1}$ and $\mathrm{G}^{2}$ - Gate
Chopper switch - DCM/S


Package Type: F


Package Type: P
Nominal weight: 500/750g


Bi-directional Switch - PBM


C1 - Aux Collector
$E^{1}$ and $E^{2}$ - Aux Emitter
$\mathrm{G}^{1}$ and $\mathrm{G}^{2}$ - Gate

Half Bridge - PHM

C1 - Aux Collector
$\mathrm{E}_{1}^{1}$ and $\mathrm{E}^{2}$ - Aux Emitter
$\mathrm{G}^{1}$ and $\mathrm{G}^{2}$ - Gate

Single Switch - FSM/S


C1 - Aux Collector
E1 - Aux Emitter
G1-Gate


C1 - Aux Collecto
E1 - Aux Emitter
G - Gate

Package Type: P
Nominal weight: 500 g



Dual Switch - GDM

$C^{1}$ and $C^{2}-$ Aux Collector
$E^{1}$ and $E^{2}$ - Aux Emitter
$\mathrm{G}^{1}$ and $\mathrm{G}^{2}$ - Gate
Chopper Switch - GCM


C1 and C2 - Aux Collector
$\mathrm{E}^{1}$ and $\mathrm{E}^{2}$ - Aux Emitter
G1 and G2 - Gate

Package Type: A
Single Switch - ASM


Half Bridge - H2HM


C1 - Aux Collector $\mathrm{E}^{1}$ and $\mathrm{E}^{2}$ - Aux Emitter $\mathrm{G}^{1}$ and $\mathrm{G}^{2}$ - Gate
Chopper Switch - ACM


3 - Aux Collector
2 - Gate
1 - Aux Emitter


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