

Medium power modules

Coming from high-power semiconductors, ABB is regarded as one of the world's leading suppliers setting standards in quality and performance. ABB's unique knowledge in high-power semiconductors now expands to industry standard medium-power IGBT and bipolar (thyristor/diode) modules.



Medium power module lines

ABB is launching in a first wave in 2015 the following IGBT and bipolar (thyristor/diode) modules:

62Pak: 1,700 volt, 150 - 300 ampere, dual IGBT in a 62 mm package

20Pak, 34Pak: 1,600 - 1,800 volt, 110 - 170 ampere dual thyristor modules

50Pak, 60Pak and 77Pak: 2,200 - 6,000 volt, 520 - 890 ampere dual diode modules

The next modules to follow are:

LoPak1: 1,700 V, 225 - 450 A dual IGBT module

LoPak3: 1,770 V, 225 - 450 A six-pack IGBT module

20Pak, 34Pak: dual diode modules

50Pak, 60Pak and 77Pak: dual thyristor modules

Applications

The modules feature industry standard housings and are designed for very low losses and highest operating temperatures.

Typical applications include:

- Variable speed drives
- AC motor soft starters
- Power supplies
- Power quality
- UPS
- Renewable energies

Thyristor and diode module technology

Bonded technology

Bonded contact technology uses a copper baseplate with a soldered aluminum oxide ceramic as an insulator. This enables an optimum heat transfer. This technology is used in 20Pak and 34Pak bipolar modules.

Pressure contact technology

Pressure contact technology is featured in modules with the highest reliability and quality in terms of power cycling capabilities. The module baseplate is insulated with aluminum nitride ceramic, thanks to which an excellent heat transfer and a high insulation voltage can be achieved. This technology is used in 50Pak, 60Pak and 77Pak bipolar modules.

IGBT module technology

Feature	Customer value
Proven concepts from reliable traction rated HiPak modules are used	
Spacers for substrate solder <ul style="list-style-type: none"> • homogeneous solder thickness, less delamination 	higher lifetime under cyclic loads (e.g. thermal cycles)
Pre-bowed and stamped baseplate <ul style="list-style-type: none"> • reduced gap and lower interface resistance to sink, less grease pump-out 	higher thermal utilization more power, higher lifetime
Spacers for main terminal solder <ul style="list-style-type: none"> • homogeneous and thus stronger solder layer 	higher lifetime under cyclic load and more robust against vibrations

