



## Product Brief

# PrimePACK™ with IGBT5 and .XT

## The dawning of a new era

The tremendous success of PrimePACK™ since the introduction in 2006 confirms that it is the optimal choice for the majority of high-power inverters. Now, PrimePACK™ is the first product family using the next generation of IGBTs.

IGBT5 and .XT mark a new era in IGBT chip and interconnection technologies. IGBT5 allows higher power densities, while the new interconnection technology .XT extends lifetime through enhanced thermal and power cycling capabilities.

### Increased power density

The new PrimePACK™ modules include IGBT5 – our latest chip generation with a 25 K higher maximum operation junction temperature ( $T_{vjop} = 175^{\circ}\text{C}$ ). This allows higher power densities in 1200V and 1700V applications. Thus, within the same PrimePACK™ footprint, the output power within the application can be increased by 25%.

### Longer lifetime

PrimePACK™ has been developed with .XT interconnection technology to fulfill current and future lifetime requirements. This has been realized by sintering IGBT chips and diodes along with improved system soldering and replacing aluminum bonds by copper bonds. Applications benefit from increased system availability due to a ten times longer lifetime of the PrimePACK™ module.

### Design flexibility

By integrating IGBT5 and .XT into PrimePACK™ system designers get greater flexibility. Using the new PrimePACK™ with IGBT5 the output power in the application can either be increased by 25% or the lifetime can be increased tenfold with the same output current. Various tradeoffs between output power and lifetime are feasible. With this new design flexibility, the optimum fit for the majority of systems can be realized.

With years of experience, a steady stream of innovations and the latest, optimized chip generations, we always provide the optimal solution for demanding applications like wind, solar and industrial drives.



### Key features

- > Reduced static and dynamic losses
- > Increased thermal and power cycling capabilities
- > Increased operation temperature up to  $T_{vjop} = 175^{\circ}\text{C}$

### Benefits

- > Increases power density by 25% or 10 times longer lifetime
- > Less cooling effort for same output power
- > Enables higher system overload conditions



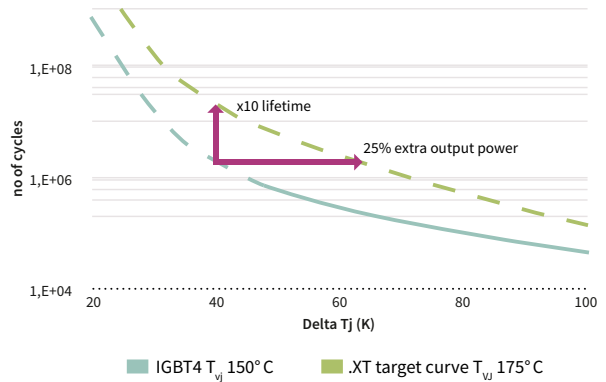
# PrimePACK™ with IGBT5 and .XT

The dawning of a new era

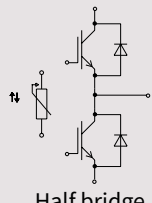
## Packages and portfolio

PrimePACK™ with IGBT5 and .XT comes in the well-known PrimePACK™ 2 package as well as in the PrimePACK™ 3+ package.

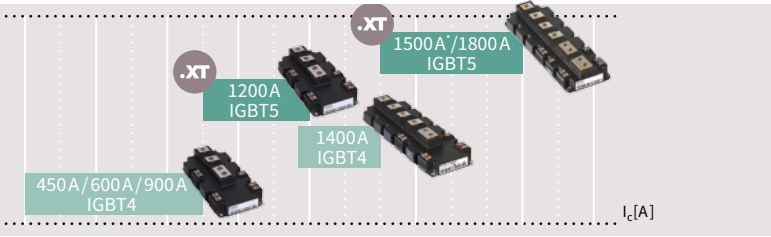
PrimePACK™ 3+ offers the same footprint as PrimePACK™ 3 but features two AC bus bars and AC terminals to carry the increased current. Moreover, it contains an additional control terminal that provides low-inductive connectivity to the collector of the bottom IGBT.



## 1200 V PrimePACK™ portfolio



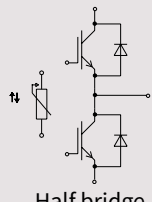
Half bridge

PrimePACK™ 3+	
PrimePACK™ 2	
PrimePACK™ 3	
PrimePACK™ 2	

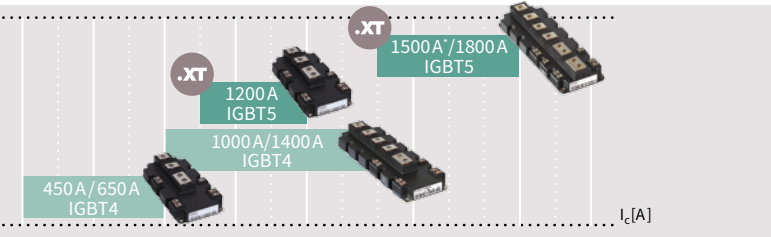
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\* Planned type

## 1700 V PrimePACK™ portfolio



Half bridge

PrimePACK™ 3+	
PrimePACK™ 2	
PrimePACK™ 3	
PrimePACK™ 2	

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