

PrimePACK™ for CAV applications



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가상부스에 오신 걸 환영합니다!



Target applications

Construction machines



Mining applications



Heavy buses



PrimePACK™

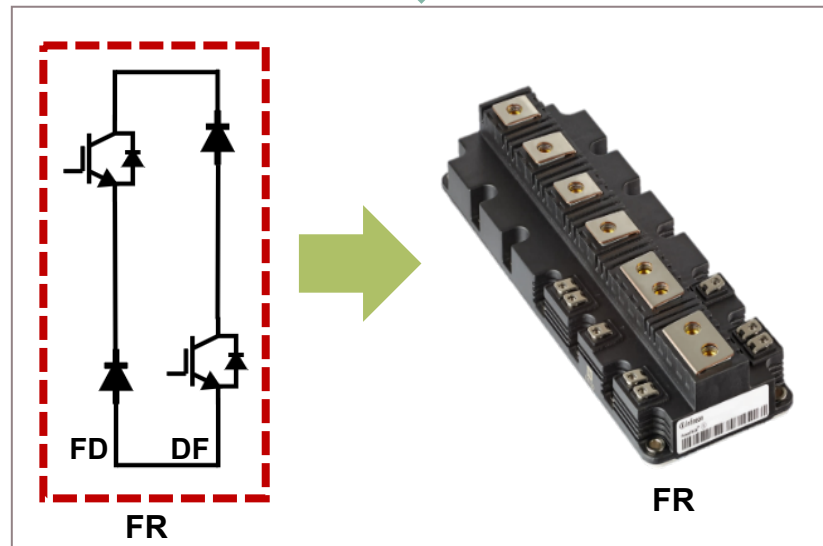
Long-haul e-trucks



Special module for switched reluctance (SR) drives

SR motors are becoming increasingly popular in heavy-duty CAV applications due to the fact that they are simple, cost-efficient and offer robust operation in harsh environments

FR900R12IP4D

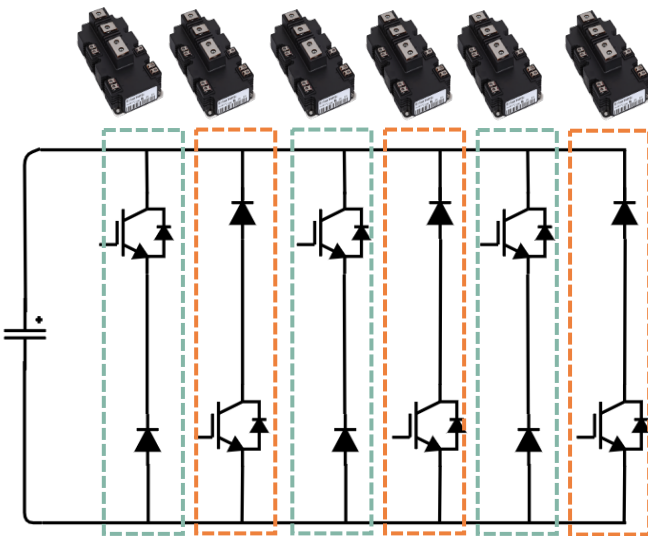


Features

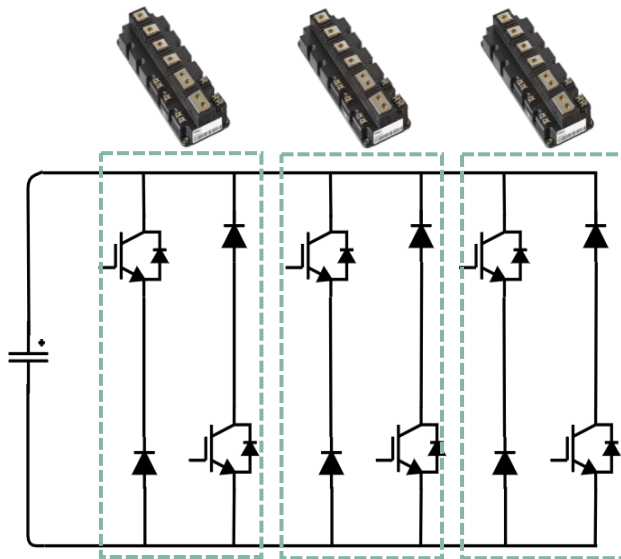
- › Two integrated choppers in a single housing
- › Enlarged diode to carry full load current
- › PrimePACK™ 3+ housing offers high vibrational and shock robustness
- › Performance ensured through tougher testing conditions
 - **Sine sweep vibration test = 15 g**
 - **Shock test = 50 g**

Cost-efficient solution for SR motor drives

Asymmetric converter topology
with separate FD-DF modules



New solution
with FR dual chopper module



- ☺ Cost-efficient solution
- ☺ 3 modules required instead of 6 for the same power rating
- ☺ 27% smaller heat sink needed
- ☺ Simplified bus bar/driver design

FR900R12IP4D enables a compact, robust and cost-efficient inverter design

Key requirements

Heavy-duty CAV applications



Outstanding lifetime and reliability
in small spaces

High thermal and power cycling
capabilities

High ruggedness against
vibrations and shock

Robustness against hazardous
conditions

PrimePACK™
IGBT5.XT
one-stop
solution for these
demanding
requirements

PrimePACK™ IGBT5.XT

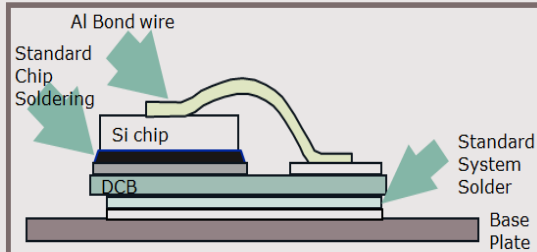
Providing higher power and prolonged lifetime



Interconnection / joining technologies

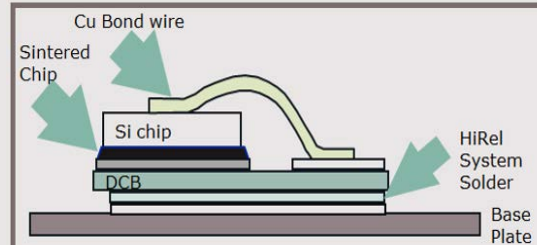
Result – longer lifetime

Standard joining technology

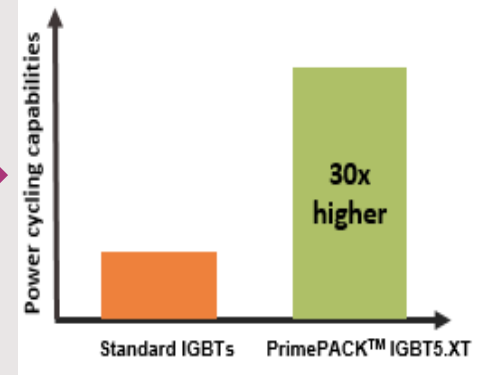


- › Aluminum bond wires
- › Chip soldering
- › Standard system soldering

.XT joining technology



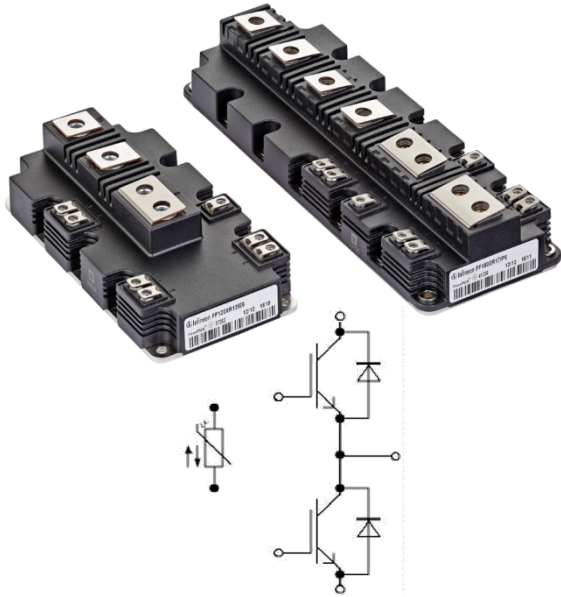
- › Aluminum bond wires
- › Chip soldering
- › Standard system soldering



PrimePACK™ IGBT5.XT uses new IGBT5 and advanced interconnection technologies to provide high power density and longer lifetime capabilities

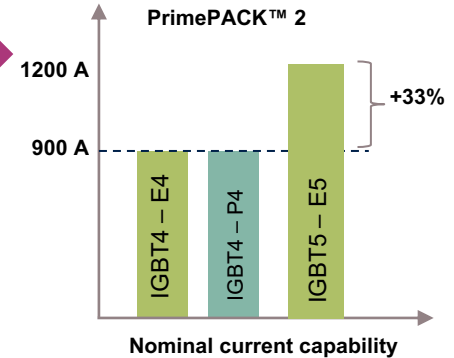
PrimePACK™ IGBT5.XT

Providing higher power and prolonged lifetime



Features

- › High power density with new IGBT5
- › Benchmark in power cycling capabilities
- › Housing designed to offer high vibrational and shock robustness
- › $T_{vj,op} = 175^{\circ}\text{C}$ (continuous operation) enables more output RMS current
- › Humidity robustness (HV- H3TRB)
- › High overload capabilities



Long-haul e-trucks & heavy-duty CAV applications benefit from high **power cycling & reliability** of PrimePACK™ IGBT5.XT



Summary

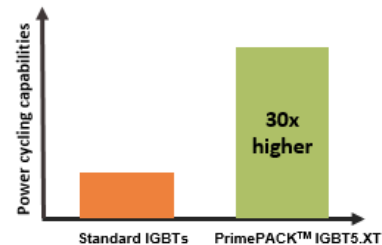
PrimePACK™ - FR900R12IP4D

- ✓ FR configuration with 2 integrated choppers facilitates a compact, reliable and cost-efficient inverter design to drive switched reluctance motors
- ✓ Housing design to offer high vibrational and shock robustness
- ✓ Significantly reduced system costs and design simplicity



PrimePACK™ IGBT5.XT Benchmark in lifetime

- ✓ Higher power cycling capabilities with advanced interconnection technologies



- ✓ Higher power density
- ✓ Higher continuous $T_{vj,op}$, up to 175°C
- ✓ Increased system overload capabilities



Part of your life. Part of tomorrow.