



Vincotech

# ENERGY STORAGE SOLUTIONS



EMPOWERING YOUR IDEAS

# Energy Storage Solutions

## 1500 V PCS

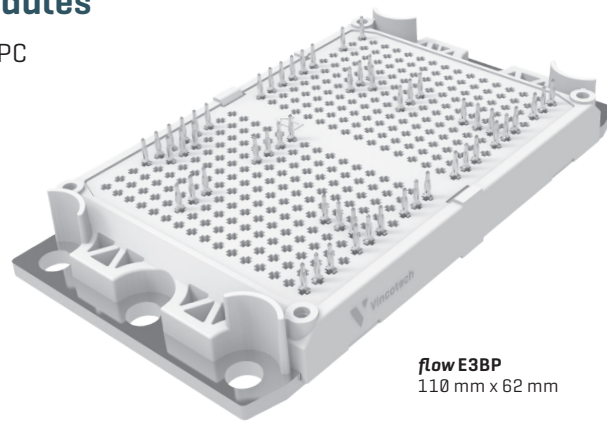
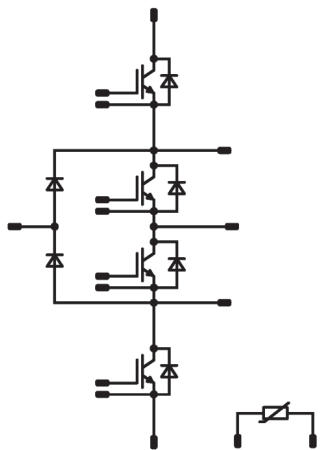
Energy storage is increasingly important to meet the growing demand for clean energy. As concerns grow about the ecological impact of fossil fuels, energy storage systems (ESS) help reducing the variable nature of solar and wind energy production. It helps to increase the resilience of the power grid by improving the responsiveness to large fluctuations in energy demands. Efficient energy storage systems can minimize energy loss and improve the operating efficiency of the entire system.

Vincotech's high-efficiency power modules feature the latest topologies using optimized combinations of Silicon and Silicon Carbide components. Housed in low parasitic inductance packages and using advanced die attach technology, they help to maximize the performance and reliability of energy storage systems.

### 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowNPC E3BP:** 1200 V H7 IGBT NPC

Art. No.: 30-EP12NIA400H7-PM40F07T



**flow E3BP**  
110 mm x 62 mm

- / Support 1600 VDC and beyond PCS up to 250 kW
- / Latest Si technology for best cost/performance ratio
- / Low inductive commutation loops [ $\sim 3\text{-}6\text{ nH}$ ] for low voltage overshoot
- / Optimized for heat pipe placement
- / Maximum ROI with high efficiency chipset
- / New 12 mm flow E3BP baseplate housing

**Power rating**  
**250 kW**  
**three-phase**  
**system**

# Technical Trends

/ **High efficiency**  
NPC, ANPC

/ **High switching frequency**  
16 kHz, Si – NPC or ANPC  
35 kHz, SiC – ANPC with inner modulation

/ **High power density**  
Modular 50 kW to 250+ kW design

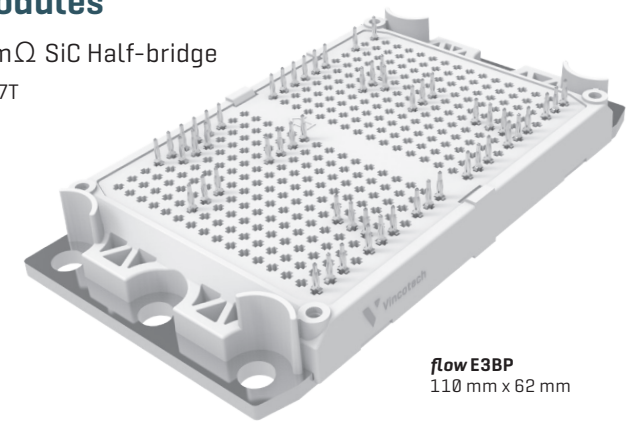
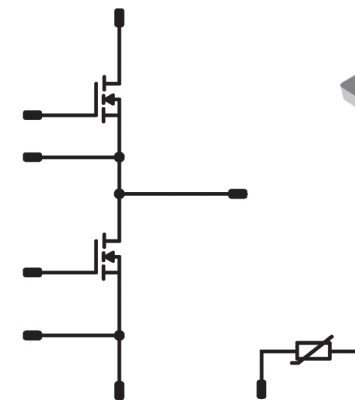
/ **High reliability**  
950 V S7 or 1200 V HS IGBT  
Base-plated and base-plateless housing  
Advanced die-attach technology

/ **Full bi-directional power**  
Fully rated current components

### 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowDUAL E3BP SiC:** 2300 V / 4 m $\Omega$  SiC Half-bridge

Art. No.: 30-EP232PB004ME01-PR09F07T



**flow E3BP**  
110 mm x 62 mm

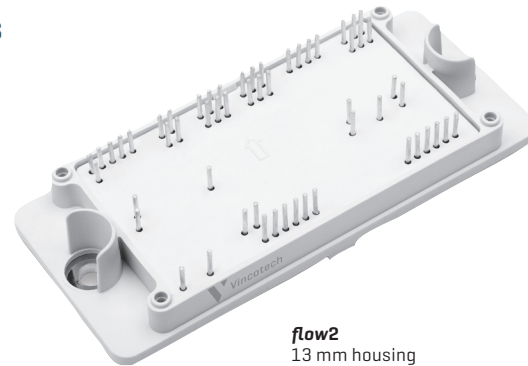
- / Support 1600 VDC and beyond PCS up to 250 kW
- / Latest 2.3 kV SiC technology for best cost/performance ratio
- / Low inductive commutation loops
- / Optimized for heat pipe placement
- / Maximum ROI with high efficiency chipset
- / New 12 mm flow E3BP baseplate housing

**Power rating**  
**250 kW**  
**three-phase**  
**system**

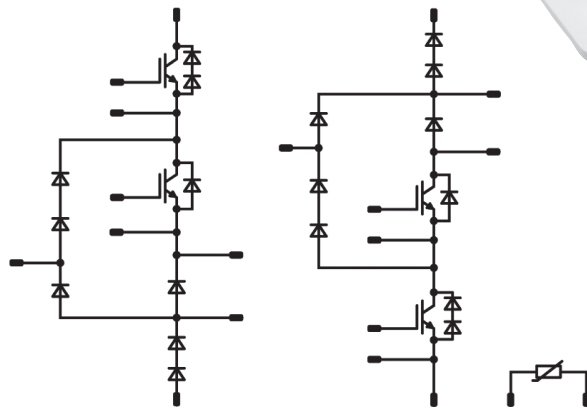
## 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowNPC2:** 1200 V HS IGBT NPC

Art. No.: 30-FT12NIA150SH-LG09F08



flow2  
13 mm housing



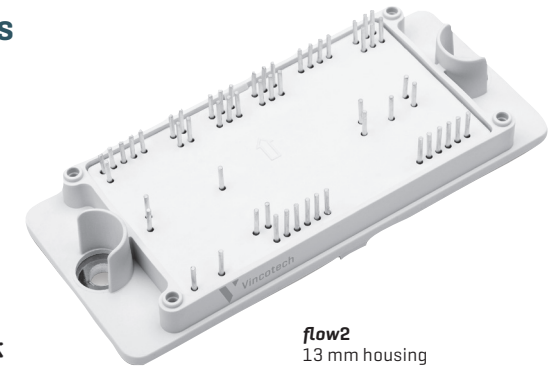
- / Support 1600 VDC and beyond PCS up to 100 kW
- / Tandem diode for optimum cost/performance
- / Easy parallel connection for power expansion
- / Split DCB to reduce the voltage stress
- / flow2 baseplate housing for easy thermal design

**Power rating**  
**50~100 kW**  
**three-phase**  
**system**

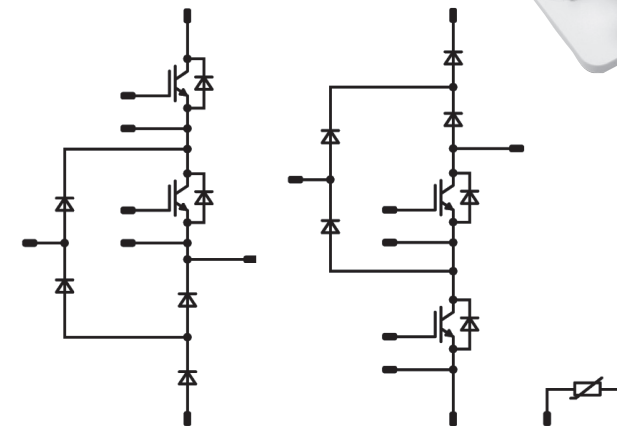
## 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowNPC2:** 1200 V HS IGBT NPC

Art. No.: 30-PT12NIA200H7-LG00F18Y



flow2  
13 mm housing



- / Support 1600 VDC and beyond PCS up to 115 kW
- / Easy parallel connection for power expansion
- / Low inductive commutation loops
- / Split DCB to reduce the voltage stress
- / flow2 baseplate housing for easy thermal design

**Power rating**  
**~115 kW**  
**three-phase**  
**system**

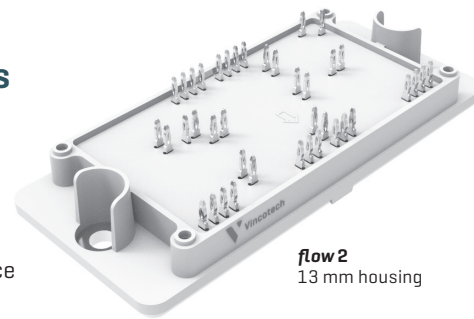
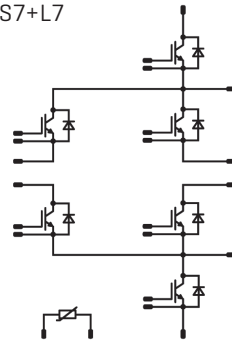


## 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowANPC 2:** 950 V S7+L7 ANPC

Art. No.: 30-FT10NAA200S701-PE59F08

- / Support 1500 VDC bus
- / ANPC design to reduce the stray inductance
- / flow2 baseplate for easy thermal design
- / Easy parallel connection for power expansion
- / Highest efficiency due to 950 V S7+L7



flow2  
13 mm housing

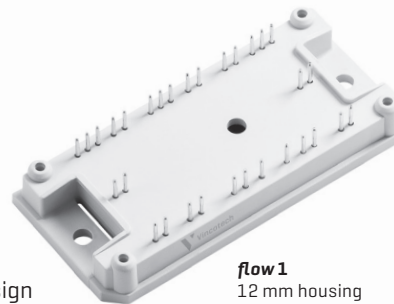
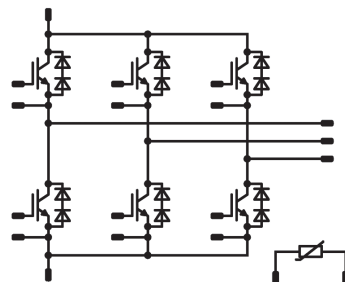
Power rating  
100~150 kW  
three-phase  
system

## 1500 V<sub>DC</sub> PCS DC/AC Modules

**flowPACK 1:** 1200 V IGBT4-HS3

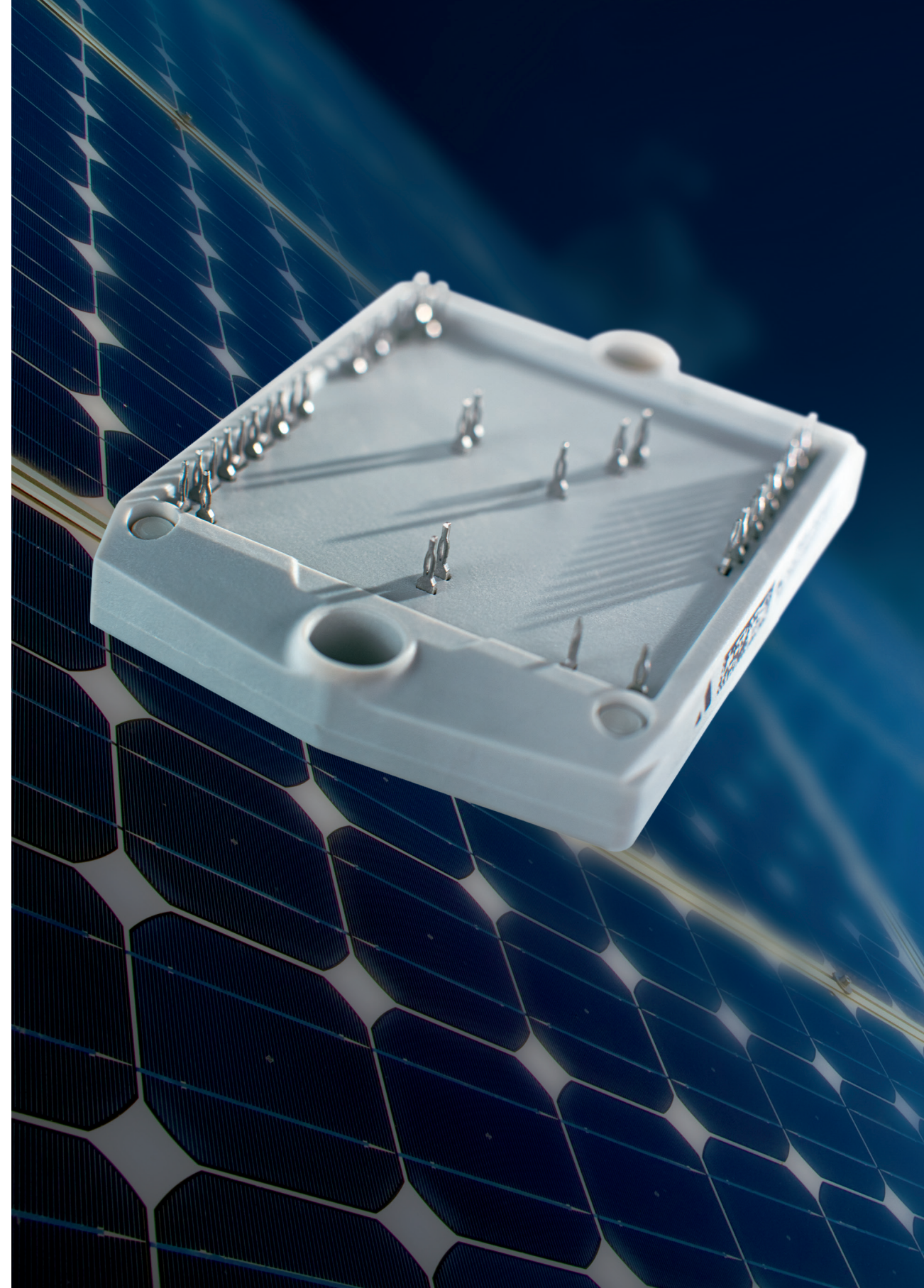
Art. No.: 10-FY126TA075SH-L829F68

- / Support 1600 VDC and beyond PCS up to 150 kW
- / 2x Sixpack in series for bidirectional DC-DC
- / 2x flow1 housing for better layout and thermal design
- / Tandem diode for optimum cost/performance

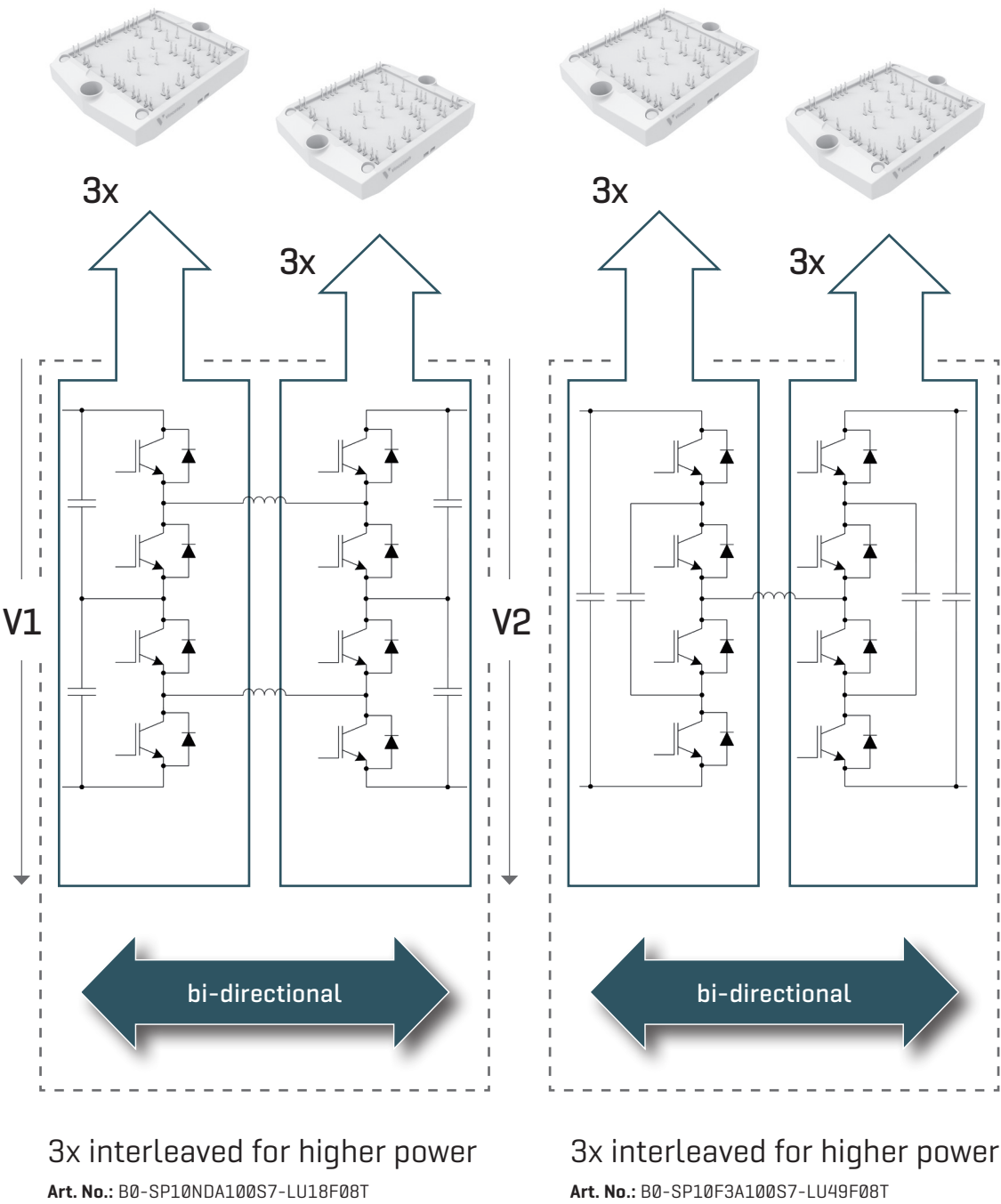


flow1  
12 mm housing

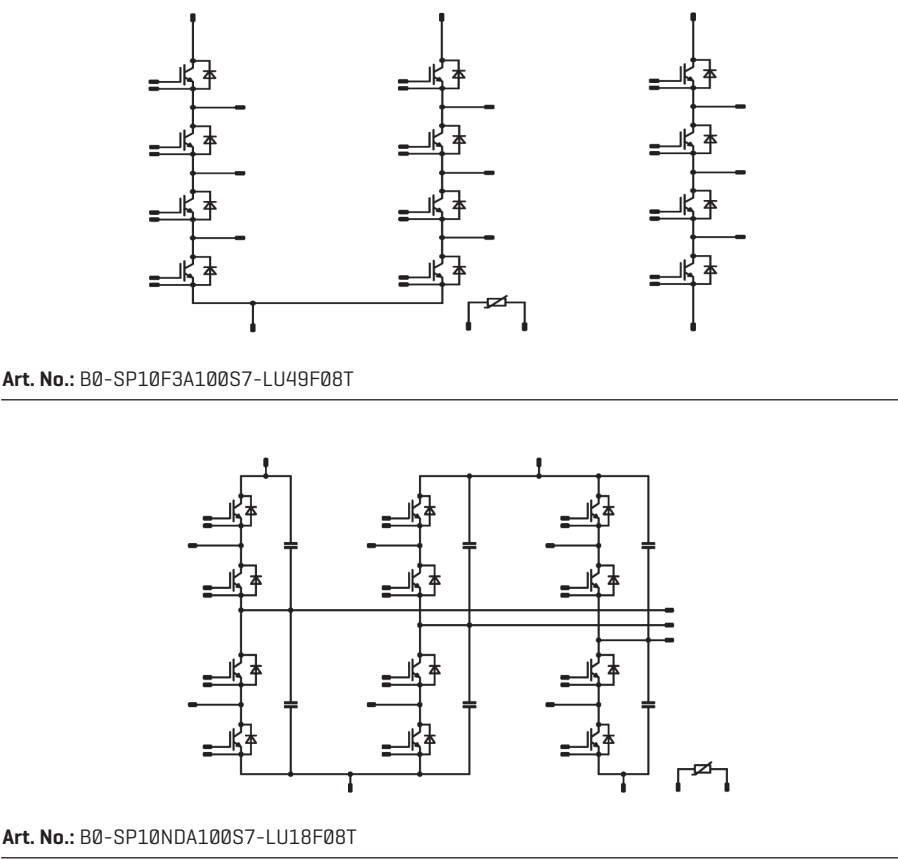
Power rating  
100~150 kW  
three-phase  
system



# 1500 V<sub>DC</sub> PCS DC/DC Modules

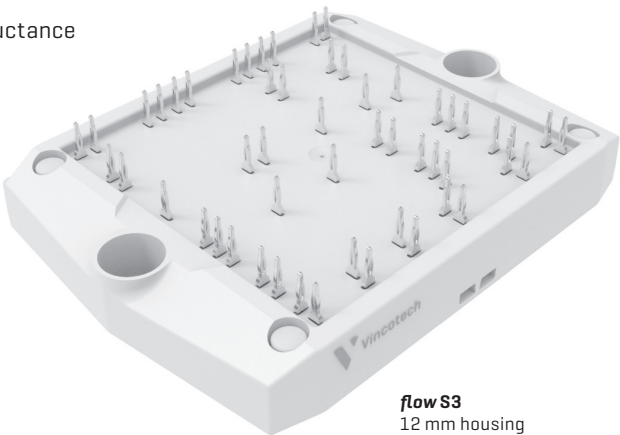


## flow3xBUCK-BOOST S3



- Features:**
- / NPC without diodes or flying capacitor topology
  - / flow S3 baseplate-less design for improved cost/performance
  - / 3x buck-boost in one housing
  - / Single DCB design to reduce the stray inductance
  - / High efficiency due to 950 V S7

**Power rating**  
60~80 kW  
three-phase  
system





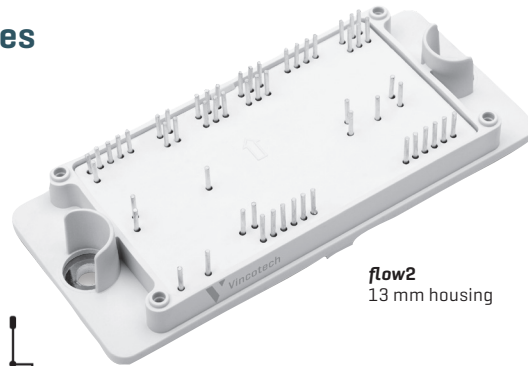
# Energy Storage Solutions

1000 V PCS

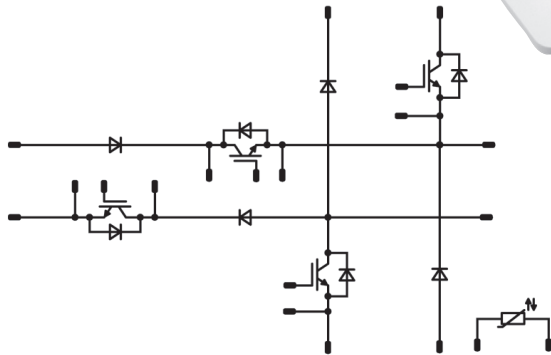
## 1000 V<sub>DC</sub> PCS DC/AC Modules

**flowMNPC 2:** 1200 V H7 IGBT MNPC

Art. No.: 30-FT12NMA300H7-PL99F08-/3/  
30-FT12NMA400H7-PL90F08-/3/



**flow2**  
13 mm housing



- / Optimized for 1000 V PCS up to 150 kW
- / Latest H7 IGBT for best cost/performance ratio
- / Low inductive commutation loops, low voltage overshoot
- / Maximum ROI with high efficiency chipset
- / flow2 baseplate housing for easy thermal design

**Power rating**  
**100~150 kW**  
**three-phase**  
**system**

# Technical Trends

/ **High efficiency**  
NPC, MNPC

/ **High switching frequency**  
16 kHz, Si - NPC or ANPC

/ **High power density**  
Modular 50 kW to 200+ kW design

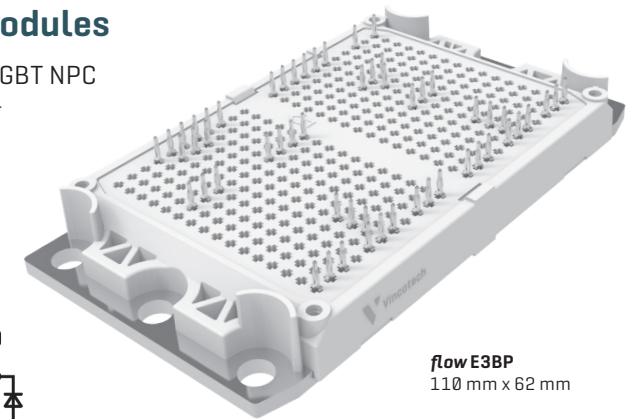
/ **High reliability**  
1200 V HS IGBT  
Baseplated and baseplated-less housing  
Advanced die-attach technology

/ **Full bi-directional power**  
Fully rated current components

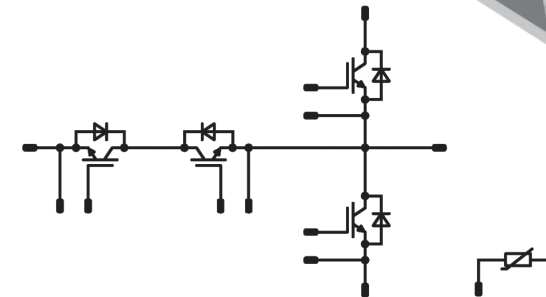
## 1000 V<sub>DC</sub> PCS DC/AC Modules

**flowNPC E3BP split:** 12000 HS IGBT NPC

Art. No.: 30-EP12NMA400H7-PM19F07T



**flow E3BP**  
110 mm x 62 mm



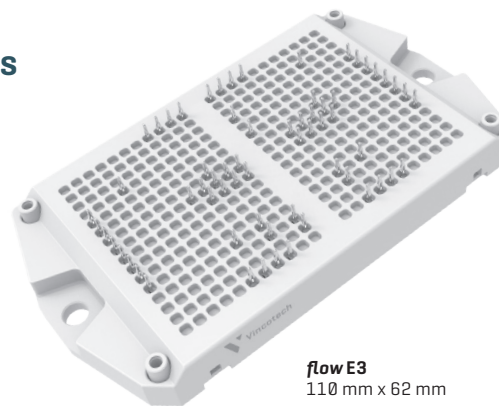
- / Optimized for 1000 V PCS up to 200 kW
- / Latest H7 IGBT for best cost/performance ratio
- / Low inductive commutation loops low voltage overshoot
- / Maximum ROI with high efficiency chipset
- / New 12 mm flow E3BP baseplate housing

**Power rating**  
**200 kW**  
**three-phase**  
**system**

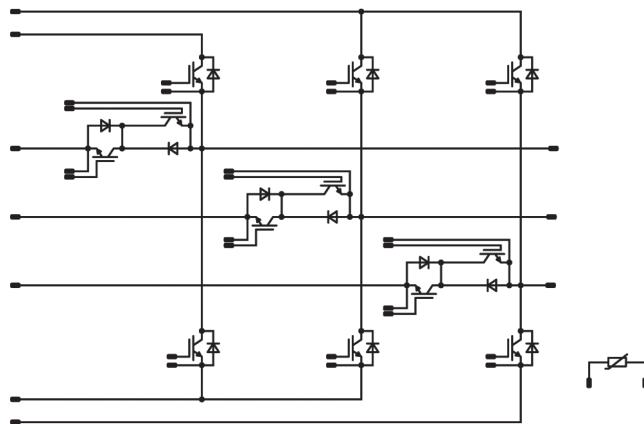
## 1000 V<sub>DC</sub> PCS DC/AC Modules

**flow3xMNPC E3:** 1200 V IGBT 3xMNPC

Art. No.: B0-EP12M3A150H702-PH09F48T-/7/



**flowE3**  
110 mm x 62 mm



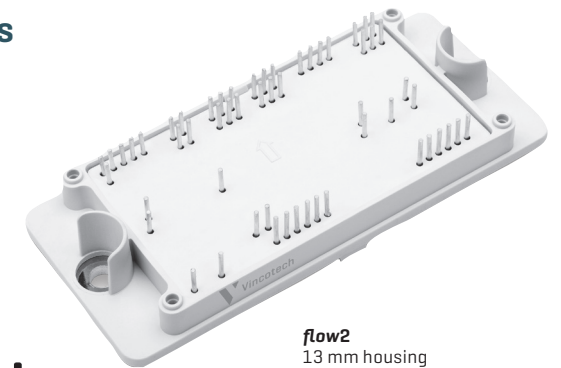
- / Optimized for 1000 V PCS up to 50 kW
- / Latest H7 IGBT for best cost/performance ratio
- / Low inductive commutation loops, low voltage overshoot
- / Maximum ROI with high efficiency chipset
- / New 12 mm flow E3BP baseplate housing

**Power rating**  
**50 kW**  
**three-phase**  
**system**

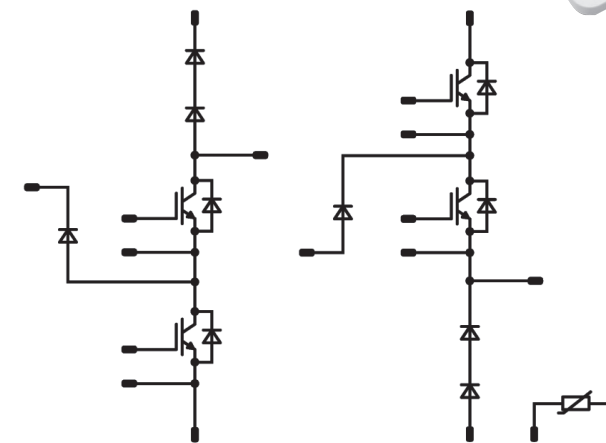
## 1000 V<sub>DC</sub> PCS DC/AC Modules

**flowNPC2:** 650 V Fast IGBT NPC

Art. No.: 30-PT07NIB300S502-LE06F58Y



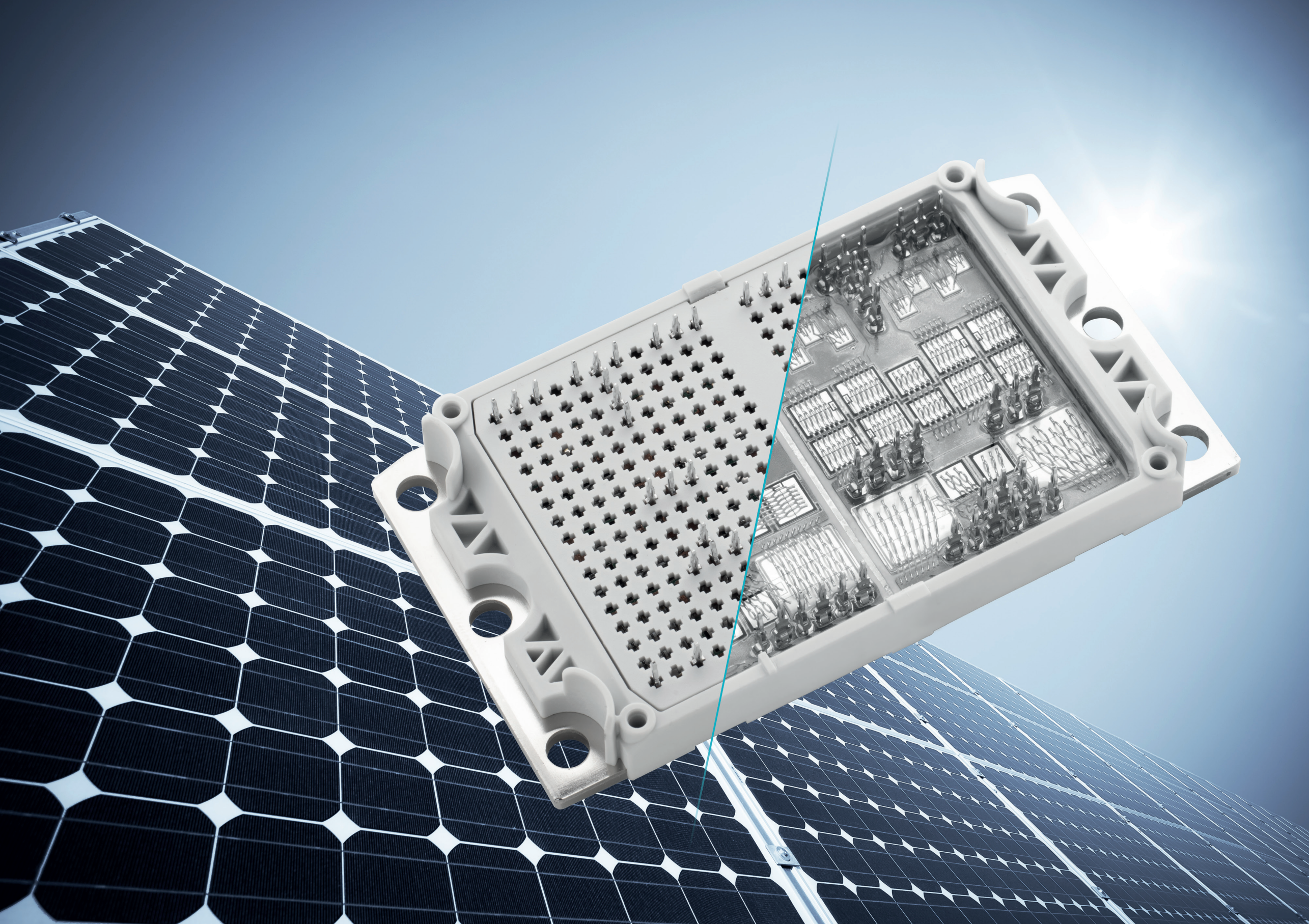
**flow2**  
13 mm housing



- / Optimized for 1000 V PCS up to 100 kW
- / Easy parallel connection for power expansion
- / Split DCB to reduce the voltage stress
- / flow2 baseplate housing for easy thermal design

**Power rating**  
**100 kW**  
**three-phase**  
**system**









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