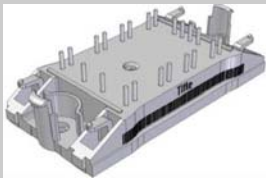


## Power Modules for Solar Inverters

### Power Modules



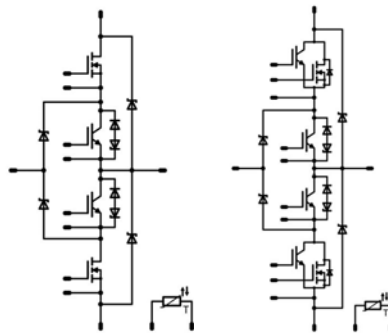
flow0 housing  
12 x 66 x 33mm

- > 99% efficiency at P = 3kW per phase
- 15kW cont. output power per phase => 45kW (3~ inverter)
- highest efficiency with featuring SiC & CoolMOS™
- low cost alternative with hyper fast Si-FRED
- in the compact 12mm 2-clip flow0 housing

Vincotech is pleased to announce the release of six new products, specifically designed for the solar inverter market.

### New Topology

With 1200V diodes placed between output and DC, the new topology is prepared for reactive power. The combination of the advantages of IGBT technology at high current with the superior dynamical behavior of the MOS-FET technology leads to a paralleled topology where a MOS-FET is paralleled with the IGBT.



P965-F  
mixed NPC

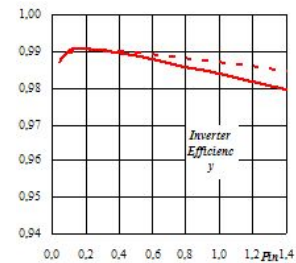
P969-F  
mixed parallel NPC

The MOS-FET is delayed at switch off so that the switching losses are assigned to the MOS-FET. The 99mΩ CoolMOS will also carry the current at low power whereas the IGBT will take the majority at max load condition. With this topology it is possible to improve the efficiency at full load.

### Maximum Efficiency of >99%

The chip technologies used in the solar modules, which include SiC, CoolMOS™ and trench fieldstop IGBT and ultrafast PT-IGBT, are combined to achieve a superior efficiency at a wide power range. In the following the module P965-F - 45mΩ - CoolMOS™ (solid line) is compared with the P969-F using a 99mΩ CoolMOS in parallel

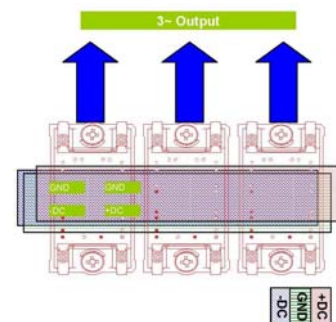
with an ultrafast IGBT(dashed line).  
f=16kHz, P<sub>N</sub> = 10kW



### New Product Range

type	P per phase T <sub>H</sub> = 80°C f = 16kHz	topology
P965-F	10kW	mixed - SiC
P965-F10	10kW	mixed - Si-FRED
P967-F	10kW	mixed parallel - SiC
P967-F10	10kW	mixed parallel - Si-FRED
P969-F	15kW	mixed parallel - SiC
P969-F10	15kW	mixed parallel - Si-FRED

### Power Flow



The pinning supports an optimized power flow on the PCB. The DC+/- and NP terminals are designed for a low inductive connection to the PCB. The output is on the module front side which makes it also easy to parallel the modules for higher power applications.

CoolMOS is a trade mark of Infineon Technologies AG

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