

## Product note

# SiC LinPak

New standard for high-power IGBT & SiC modules

Hitachi Energy extends the well-established LinPak family with devices based on silicon carbide (SiC) technology.

Semiconductors from Hitachi Energy are the benchmark for quality and performance. In addition to celebrating the production of the one millionth HiPak, we were the first company to launch and ramp-up production of LinPak, the new standard for high-power IGBT & SiC modules. By enabling efficient power flow in the electric trains and trams, these devices bring people to work, by allowing a reliable operation of medium voltage drives they assist in the supply of the essential water to people as well as agriculture. To further improve the efficiency of these types of frequency converters, Hitachi Energy offers SiC based LinPaks.

### SiC LinPak benefits

SiC LinPak devices deliver several benefits, including a massive reduction of switching losses, an increase in current density and higher maximum junction temperature. These enhancements mean power conversion system efficiency is improved, a smaller footprint

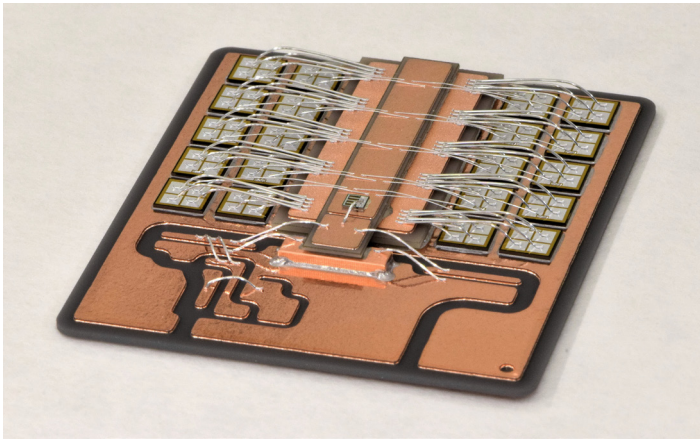


is achieved and cooling requirements are much lower. The new SiC LinPaks enable increased switching frequency, significantly reducing filtering requirements. This makes the output wave curve much smoother, protecting the motor turned by the drive.

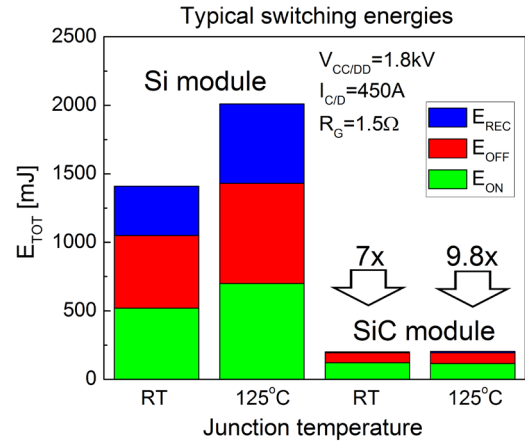
### Features SiC LinPak

- Lowest internal stray inductance for a SiC based power module
- One module for different voltage ratings, easy paralleling with one driver and excellent current sharing
- Unmatched power cycling capability

- Easy replacement of Si LinPak similar devices – open standard
- Voltage range 1700 V / 3300 V
- Operation up to 175 °C



Double-layer substrate to enable paralleling of many small SiC chips



Losses comparison Si vs SiC modules

## Typical applications

Typical applications for SiC LinPaks include

- Propulsion traction converters
- Turbine starters in aviation
- String inverters in photovoltaic applications
- Battery charging systems
- Auxiliary traction converters
- Uninterruptible power supply (UPS) systems

## Availability

SiC LinPaks rated at 1700 V and 3300 V are available. Further availability will be based on demand. Please contact us for more information.

Part number	Voltage (V)	Ampere (A)	Configuration
5SFG 0900X170100 E.S. <sup>1</sup>	1700	2 x 900	(5) - Phase leg MOSFET
5SFG 1800X170100 E.S. <sup>1</sup>	1700	2 x 1800	(5) - Phase leg MOSFET
5SFG 0500X330100 E.S. <sup>1</sup>	3300	2 x 500	(5) - Phase leg MOSFET
5SFG 1000X330100 E.S. <sup>1</sup>	3300	2 x 1000	(5) - Phase leg MOSFET



## SiC LinPak

Delivers the highest current rating

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