

Dynex Semiconductor Ltd delivers advanced power electronic semiconductor and system solutions from its Lincoln, UK HQ. It is recognised worldwide as a specialist designer and manufacturer of IGBT, discrete bipolar devices and power assemblies. It now benefits from being part of CRRC Corporation of China with access to its volume manufacturing and applications expertise. Lincoln is the CRRC Centre of Excellence for power semiconductor R&D and electric vehicle power assemblies.



### IGBT, FRD die and Module Technology

With advanced design and Si fabrication capabilities, Dynex offers high reliability standard and custom IGBT and diode modules with ratings up to 3600A and 6500V for automotive, aerospace, traction, HVDC, renewable energy & industrial applications. In 2017, Dynex introduced



the world's most capable Press-pack IGBT, with power ratings of up to 3000A at 4500V. Dynex modules are designed for operation under extreme conditions and are one of the main outputs from its advanced wafer foundry and assembly facilities. In addition, Dynex offers a Silicon die manufacturing foundry service to external customers.

### Bipolar Products and Technology

Dynex's bipolar products consist of thyristors, power diodes, gate turn-off thyristors and fast recovery diodes. Dynex thyristors feature latest ion implant technology for marked improvements in switchable power density. Voltages extend to 8.5kV with current ratings to 7kA at silicon diameters up to 150mm. Dynex diode voltages extend to 9kV, currents to 11kA and are used on IGBT inverter front-end rectifiers, smelters and trackside rectification. Dynex is committed to the continued production of GTOs up to 4.5kV.

### Power Assemblies

The long experience of utilising the Dynex semiconductor range, and an understanding of applications, enables the group to provide optimum power assemblies solutions. These include protection and control

electronics, air and liquid cooled assemblies, semiconductor device test equipment, and pulse power systems. Heat sinks and clamping arrangements are available.

### Silicon Carbide

Dynex has been involved in the development in wide band-gap power semiconductors, in particular silicon carbide (SiC), since 2011. Projects on SiC have included 1.2-3.3 kV SiC MOSFETs and SBDs, 3.3 kV Pin diodes, and hybrid/full SiC power modules for traction and other applications.

### R&D Centre Assemblies – Electric Vehicles

The R&D Centre Assemblies group develop integrated power units for electric vehicles. Across the board knowledge enables the group to provide products with high power density. New technologies include intelligent gate drives, 3D thermal management, advanced packaging and EMC technologies, condition monitoring and health management.

