

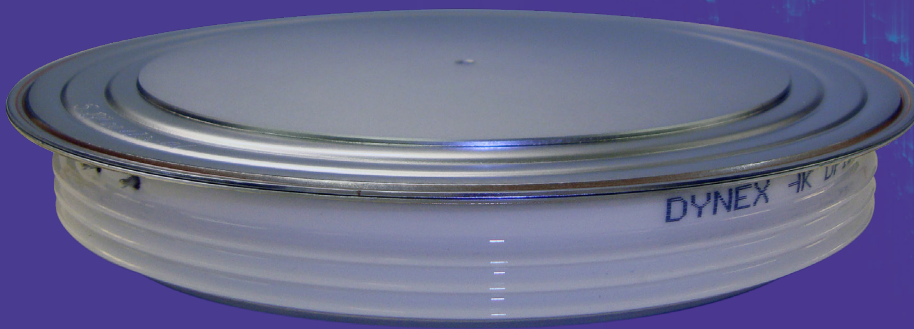
4.5kV Press-pack IGBT Product Range



PowerSemiconductors

'Cutting edge technology for market leading performance'

Applications include: Renewables, VSC-HVDC, STATCOM, Circuit Breakers and MV Drives.



Designed primarily for electric utilities and medium voltage drive applications, Dynex Press-pack IGBT products incorporate state-of-the-art design and manufacturing technologies to ensure both high performance and reliability.

Dynex Press-pack devices offer an alternative option to conventional plastic case IGBT modules whilst offering the same advantages such as:

- Industry standard 10 μ s short circuit withstand,
- High DC stability via advanced edge termination design and passivation,
- Low switching losses and $V_{CE(sat)}$.

The use of advanced silver sintering die bonding technology and a hermetically-sealed ceramic housing means the Press-pack can also offer:

- Improved power cycling capability,
- Operation even in the most hostile of environments,
- Higher case-rupture ratings,
- Compatibility with both new and existing clamping systems.

With the incorporation of Dynamic Load-Balancing (DLB) technology, our Press-packs offer a unique design that ensures:

- Uniform clamping pressure on each chip during operation,
- Enhanced device life time and reliability in service,
- Compatibility with standard flatness tolerance heatsink components,
- Reduced clamping system costs and/or complexity.

The internal modular construction of the device allows for flexibility in altering the ratio of IGBT to FRD chips, allowing us to tailor to the specific needs of customer applications. For example, Dynex can offer 4.5kV products with current ratings from 120A to 3,000A as shown in the table below:

Contact Diameter (mm)	Current Rating (A)			
	All IGBT	2:1 Co-pack	1:1 Co-pack	All FRD
34	240	180	120	240
47	400	300	240	400
63	650	450	350	650
73	800	550	450	800
85	1,200	800	650	1,200
100	1,500	1,000	800	1,500
125	2,100	1,600	1,200	2,100
150	3,000	2,000	1,500	3,000

Note: Ratios are IGBT:FRD

The following tables provide a detailed look at the anticipated ratings for the vast range of products presented in Table 1 to help decide which configuration is best suited to your application.

Table 2 - 4.5kV Press-pack, All-IGBT Products

Part Number	V _{CES} (V)	I _C (A)	I _{CM} (A)	V _{CE(sat)} (V) @ T _c = 25°C	T _{J(max)} (°C)	R _{th(j-c)} (°C/kW)	Contact ø (mm)	Flange ø (mm)	Height (mm)
DPI240G45A0400	4,500	240	480	3	125	38.5	34	59	26.5
DPI400F45A0700	4,500	400	800	2.8	125	22.0	47	73	26.5
DPI650C45A1200	4,500	650	1,300	2.8	125	19.1	63	99	26.5
DPI800V45A1600	4,500	800	1,600	2.7	125	14.3	73	110	26.5
DPI1200W45A2400	4,500	1,200	2,400	2.7	125	9.5	85	120	26.5
DPI1500A45A3200	4,500	1,500	3,000	2.6	125	7.2	100	148	26.5
DPI2100P45A5200	4,500	2,100	4,200	2.4	125	4.4	125	170	26.5
DPI3000R45A7600	4,500	3,000	6,000	2.4	125	3.0	150	192	26.5

Table 3 - 4.5kV Press-pack, 2:1 Co-pack Products

Part Number	V _{CES} (V)	I _C (A)	I _{CM} (A)	V _{CE(sat)} (V) @ T _c = 25°C	V _F (V) @ T _c = 25°C	I _{FSM} (kA)	T _{J(max)} (°C)	R _{th(j-c)} IGBT (°C/kW)	R _{th(j-c)} FRD (°C/kW)	Contact ø (mm)	Flange ø (mm)	Height (mm)
DPI180G45C0301	4,500	180	360	3	4.2	0.8	125	51.3	154.0	34	59	26.5
DPI300F45C0502	4,500	300	600	3	3.8	1.6	125	30.8	77.0	47	73	26.5
DPI450C45C0804	4,500	450	900	2.9	3.4	3.2	125	28.6	57.2	63	99	26.5
DPI550V45C1006	4,500	550	1,100	2.8	3.1	4.8	125	22.9	38.1	73	110	26.5
DPI800W45C1608	4,500	800	1,600	2.7	3.2	6.4	125	14.3	28.6	85	120	26.5
DPI1000A45C2210	4,500	1,000	2,000	2.5	3.2	8	125	10.4	22.9	100	148	26.5
DPI1600P45C3616	4,500	1,600	3,200	2.5	3.2	12.8	125	6.4	14.3	125	170	26.5
DPI2000R45C5224	4,500	2,000	4,000	2.4	3	19.2	125	4.4	9.5	150	192	26.5

Table 4 - 4.5kV Press-pack, 1:1 Co-pack Products

Part Number	V _{CES} (V)	I _C (A)	I _{CM} (A)	V _{CE(sat)} (V) @ T _c = 25°C	V _F (V) @ T _c = 25°C	I _{FSM} (kA)	T _{J(max)} (°C)	R _{th(j-c)} IGBT (°C/kW)	R _{th(j-c)} FRD (°C/kW)	Contact ø (mm)	Flange ø (mm)	Height (mm)
DPI120G45C0202	4,500	120	240	3	2.6	1.6	125	77.0	77.0	34	59	26.5
DPI240F45C0403	4,500	240	480	3	2.9	2.4	125	38.5	51.3	47	73	26.5
DPI350C45C0606	4,500	350	700	2.9	2.6	4.8	125	38.1	38.1	63	99	26.5
DPI450V45C0808	4,500	450	900	2.9	2.5	6.4	125	28.6	28.6	73	110	26.5
DPI650W45C1212	4,500	650	1,300	2.8	2.5	9.6	125	19.1	19.1	85	120	26.5
DPI800A45C1616	4,500	800	1,600	2.7	2.4	12.8	125	14.3	14.3	100	148	26.5
DPI1200P45C2626	4,500	1,200	2,400	2.6	2.3	20.8	125	8.8	8.8	125	170	26.5
DPI1500R45C3838	4,500	1,500	3,000	2.4	2.2	30.4	125	6.0	6.0	150	192	26.5

Table 5 - 4.5kV Press-pack, All-FRD Products

Part Number	V _{CES} (V)	I _F (A)	I _{FM} (A)	V _F (V) @ T _c = 25°C	T _{J(max)} (°C)	R _{th(j-c)} (°C/kW)	I _{FSM} (kA)	Contact ø (mm)	Flange ø (mm)	Height (mm)
DPF240G45A0004	4,500	240	480	2.6	125	38.5	3.2	34	59	26.5
DPF400F45A0007	4,500	400	800	2.6	125	22.0	5.6	47	73	26.5
DPF650C45A0012	4,500	650	1,300	2.5	125	19.1	9.6	63	99	26.5
DPF800V45A0016	4,500	800	1,600	2.4	125	14.3	12.8	73	110	26.5
DPF1200W45A0024	4,500	1,200	2,400	2.4	125	9.5	19.2	85	120	26.5
DPF1500A45A0032	4,500	1,500	3,000	2.3	125	7.2	25.6	100	148	26.5
DPF2100P45A0052	4,500	2,100	4,200	2.2	125	4.4	41.6	125	170	26.5
DPF3000R45A0076	4,500	3,000	6,000	2.2	125	3.0	60.8	150	192	26.5

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