



Part Numbering Scheme For IGBT & FRD Modules

AN5700-1.4 February 2004

Since February 2001 Dynex has used the following part numbering scheme for new releases of product.

A typical product has a part number of the form DIM800DDM17-A000, made up as below:

D I M 8 0 0 D D S 1 7 - A 0 0 0

D = Dynex company identifier

D I M 8 0 0 D D S 1 7 - A 0 0 0

Prime technology within the product

I = IGBT silicon

F = FRD silicon

D I M 8 0 0 D D S 1 7 - A 0 0 0

M = Indicates product is a module

D I M 8 0 0 D D S 1 7 - A 0 0 0

Current rating (Minimum of two digits and maximum of four - accomodates currents from 10A to 9999A)

D I M 8 0 0 D D S 1 7 - A 0 0 0

Package outline - (See Tables 1 and 2)

D I M 8 0 0 D D S 1 7 - A 0 0 0

Power terminals configuration - (See Tables 3, 4 and 5)

D I M 8 0 0 D D S 1 7 - A 0 0 0

Baseplate material identifier

S = Copper baseplate

M = Metal Matrix Compound (MMC) baseplate

D I M 8 0 0 D D S 1 7 - A 0 0 0

Maximum working voltage (Divided by 100, two digits - leading zero included if required.)

e.g. 06 = 600V

12 = 1200V

17 = 1700V

33 = 3300V

65 = 6500V

D I M 8 0 0 D D S 1 7 - A 0 0 0**Technology identifier**

- A = Standard Non Punch Through (NPT) DMOS IGBT and complementary FRD
- E = Trench Field Stop IGBT die and complementary FRD
- F = Soft Punch Through (SPT) 3.5kV IGBT die and complementary FRD
- J = 600V NPT DMOS IGBT die and complementary FRD
- K = Soft Punch Through (SPT) 6.5kV IGBT die and complementary FRD
- S = 600V epitaxial Punch Through (PT) IGBT die and complementary FRD

D I M 8 0 0 D D S 1 7 - A 0 0 0**Special selection identifier**

- 000 = default (standard product)
- 076 = standard product supplied with production test results
- XXX = identifies that product is supplied against a customer requirement specification
 - e.g. DIM800DDM17-A001
 - DIM200PLM33-A019

Dynex continues to manufacture some 600V IGBT products which still use the former GEC Plessey Semiconductors' naming system (e.g. GP250MHB06S). The company identifier is GP and the last character of the part number is an 'S' (Indicating epitaxial Punch Through (PT) die). The core of the part number may be decoded using the February 2001 naming scheme. The products covered by the old naming scheme will be discontinued shortly as products are migrated across to the new B, C and W outlines and the February 2001 naming convention will be applied.

Package Outline Type Code	Dimensions (mm)	IGBT Configuration	Fast Recovery Diode Configuration	Maximum Operating Voltage Capability (kV)	Module Outline	Notes
A	190 x 140 x 48	Single switch		6.5		10.2kV isolation package
B	62 x 107 x 30	Single switch		1.7		Replaces L outline for all new designs
C	94 x 34 x 30	Half bridge Choppers		1.7		
D	140 x 130 x 38	Dual switch Uncommitted chopper		1.7		
E	190 x 140 x 38	Single switch	Triple	3.3		
F	140 x 130 x 38	Single switch	Dual	1.7		
G	140 x 130 x 38	Dual switch Uncommitted chopper		3.3		
J	140 x 130 x 64	Single switch		3.3		8.5kV isolation package

Table 1: Package outline / power terminal configuration

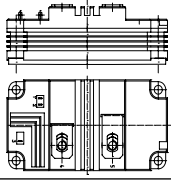


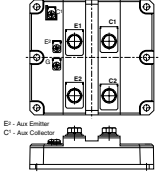

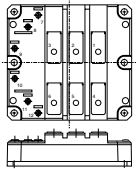

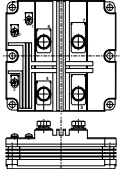
Package Outline Type Code	Dimensions (mm)	IGBT Configuration	Fast Recovery Diode Configuration	Maximum Operating Voltage Capability (kV)	Module Outline	Notes
K	140 x 73 x 48	Single switch		6.5		10.2kV isolation package
L	62 x 108 x 30	Single switch	Single	1.7		
M	62 x 108 x 30	Half bridge Chopper Bi-directional switch	Series Pair (Half bridge)	1.7		
N	140 x 130 x 38	Single	Dual	3.3		Different auxiliary locations to F
P	73 x 140 x 38	Half bridge Bi-directional	Series Pair (Half bridge)	3.3		
R	140 x 130 x 38	Switched Reluctance Machine Bridge		1.7		
W	62 x 107 x 30	Half bridge Chopper Bi-directional switch	Series Pair (Half bridge)	1.7		Replaces M outline for all new designs
X	140 x 130 x 48	Single switch		6.5		10.2kV isolation package

Table 2: Package outline / power terminal configuration

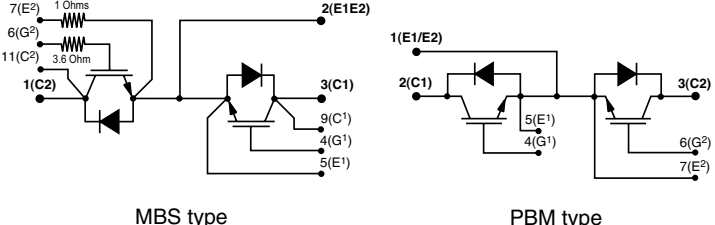
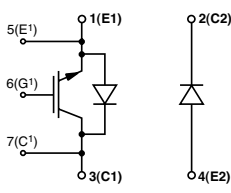
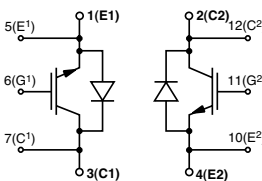
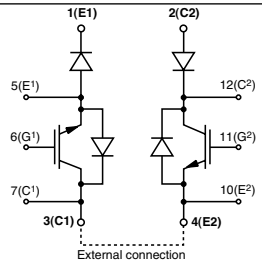
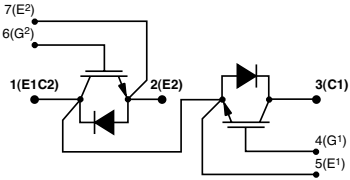
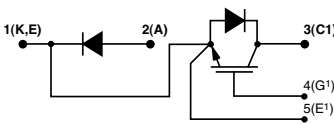
Electrical Circuit Type Code	Description	Circuit
B	IGBT Bi-directional switch (common emitter configuration)	
C	IGBT Chopper, uncommitted	
D	IGBT Dual switch	
E	IGBT Series connected symmetrical chopper pair	
H	IGBT Half bridge	
K	IGBT Chopper, upper arm controlled	

Table 3: Module electrical circuit configurations

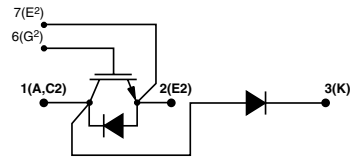
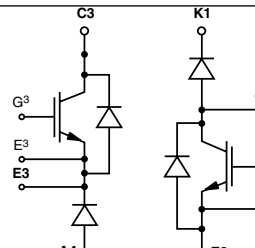
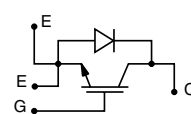
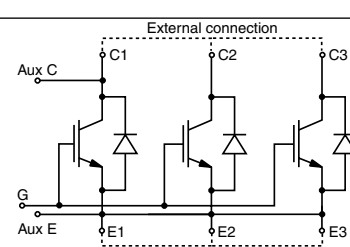
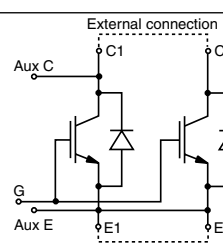
Electrical Circuit Type Code	Description	Circuit
L	IGBT Chopper, lower arm controlled	
R	IGBT Switched reluctance machine bridge	
S	IGBT Single switch B outline	
	IGBT Single switch E outline	
	IGBT Single switch F and N outline	

Table 4: Module electrical circuit configurations

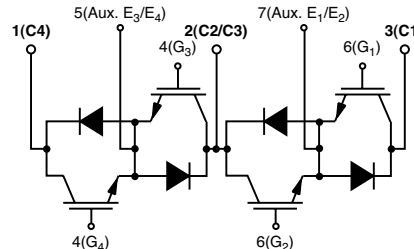
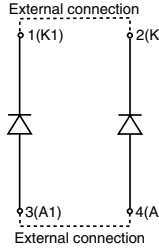
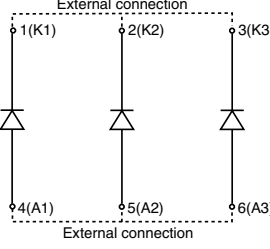

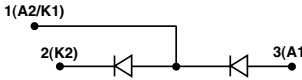
Electrical Circuit Type Code	Description	Circuit
V	IGBT Series connected pair of bi-directional switches	
X	Denotes FRD module - different configurations not specifically identified	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>External connection</p>  <p>F and N outline</p> </div> <div style="text-align: center;"> <p>External connection</p>  <p>E outline</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>B and L outline</p> </div> <div style="text-align: center;">  <p>M, L and P outline</p> </div> </div>

Table 5: Module electrical circuit configurations

POWER ASSEMBLY CAPABILITY

The Power Assembly group was set up to provide a support service for those customers requiring more than the basic semiconductor, and has developed a flexible range of heatsink and clamping systems in line with advances in device voltages and current capability of our semiconductors.

We offer an extensive range of air and liquid cooled assemblies covering the full range of circuit designs in general use today. The Assembly group offers high quality engineering support dedicated to designing new units to satisfy the growing needs of our customers.

Using the latest CAD methods our team of design and applications engineers aim to provide the Power Assembly Complete Solution (PACs).

HEATSINKS

The Power Assembly group has its own proprietary range of extruded aluminium heatsinks which have been designed to optimise the performance of Dynex semiconductors. Data with respect to air natural, forced air and liquid cooling (with flow rates) is available on request.

For further information on device clamps, heatsinks and assemblies, please contact your nearest sales representative or Customer Services.



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