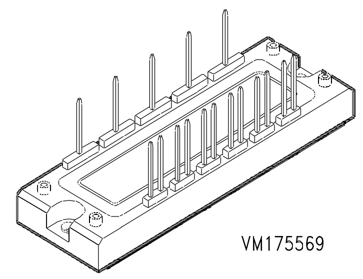
BSM 25 GD 120 DN2

eupec

IGBT Power Module



- Power module
- 3-phase full-bridge
- Including fast free-wheel diodes
- Package with insulated metal base plate

Type	V_{CE}	I_C	**Package**	**Ordering Code**
BSM 25 GD 120 DN2	1200V	35A	ECONOPACK 2	C67076-A2505-A67
BSM 25 GD120DN2E3224	1200V	35A	ECONOPACK 2K	C67070-A2505-A67

Maximum Ratings

Parameter	**Symbol**	**Values**	**Unit**
Collector-emitter voltage	V_{CE}	1200	V
Collector-gate voltage R_{GE} = 20 kΩ	V_{CGR}	1200	
Gate-emitter voltage	V_{GE}	± 20	
DC collector current T_C = 25 °C T_C = 80 °C	I_C	 35 25	A
Pulsed collector current, t_p = 1 ms T_C = 25 °C T_C = 80 °C	I_{Cpuls}	 70 50	
Power dissipation per IGBT T_C = 25 °C	P_{tot}	200	W
Chip temperature	T_j	+ 150	°C
Storage temperature	T_{stg}	-40 ... + 125	

Thermal resistance, chip case	R_{thJC}	≤ 0.6	K/W
Diode thermal resistance, chip case	$R_{thJC\mathbf{D}}$	≤ 1	
Insulation test voltage, t = 1min.	V_{is}	2500	Vac
Creepage distance	-	16	mm
Clearance	-	11	
DIN humidity category, DIN 40 040	-	F	sec
IEC climatic category, DIN IEC 68-1	-	40 / 125 / 56	

Electrical Characteristics, at T_j = 25 °C, unless otherwise specified

Parameter	**Symbol**	**Values**			**Unit**
		min.	**typ.**	**max.**	

Static Characteristics

Parameter	Symbol	min.	typ.	max.	Unit
Gate threshold voltage	$V_{GE(th)}$				V
$V_{GE} = V_{CE,}$ I_C = 1 mA		4.5	5.5	6.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$				
V_{GE} = 15 V, I_C = 25 A, T_j = 25 °C		-	2.5	3	
V_{GE} = 15 V, I_C = 25 A, T_j = 125 °C		-	3.1	3.7	
Zero gate voltage collector current	I_{CES}				mA
V_{CE} = 1200 V, V_{GE} = 0 V, T_j = 25 °C		-	0.5	0.8	
V_{CE} = 1200 V, V_{GE} = 0 V, T_j = 125 °C		-	2	-	
Gate-emitter leakage current	I_{GES}				nA
V_{GE} = 20 V, V_{CE} = 0 V		-	-	180	

AC Characteristics

Parameter	Symbol	min.	typ.	max.	Unit
Transconductance	g_{fs}				S
V_{CE} = 20 V, I_C = 25 A		10	-	-	
Input capacitance	C_{iss}				pF
V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-	1650	-	
Output capacitance	C_{oss}				
V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-	250	-	
Reverse transfer capacitance	C_{rss}				
V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		-	110	-	

Electrical Characteristics, at T_j = 25 °C, unless otherwise specified

Parameter	**Symbol**	**Values**			**Unit**
		min.	**typ.**	**max.**	

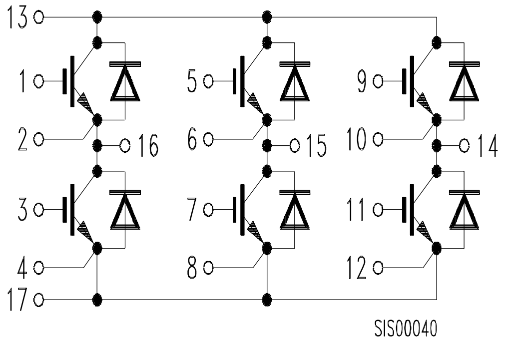
Switching Characteristics, Inductive Load at T_j = 125 °C

Parameter	Symbol	min.	typ.	max.	Unit
Turn-on delay time V_{CC} = 600 V, V_{GE} = 15 V, I_C = 25 A R_{Gon} = 47 Ω	$t_{d(on)}$	-	75	150	ns
Rise time V_{CC} = 600 V, V_{GE} = 15 V, I_C = 25 A R_{Gon} = 47 Ω	t_r	-	65	130	
Turn-off delay time V_{CC} = 600 V, V_{GE} = -15 V, I_C = 25 A R_{Goff} = 47 Ω	$t_{d(off)}$	-	400	600	
Fall time V_{CC} = 600 V, V_{GE} = -15 V, I_C = 25 A R_{Goff} = 47 Ω	t_f	-	50	100	

Free-Wheel Diode

Parameter	Symbol	min.	typ.	max.	Unit
Diode forward voltage	V_F				V
I_F = 25 A, V_{GE} = 0 V, T_j = 25 °C		-	2.3	2.8	
I_F = 25 A, V_{GE} = 0 V, T_j = 125 °C		-	1.8	-	
Reverse recovery time I_F = 25 A, V_R = -600 V, V_{GE} = 0 V di_F/dt = -800 A/µs, T_j = 125 °C	t_{rr}	-	0.13	-	µs
Reverse recovery charge I_F = 25 A, V_R = -600 V, V_{GE} = 0 V di_F/dt = -800 A/µs	Q_{rr}				µC
T_j = 25 °C		-	2.3	-	
T_j = 125 °C		-	6	-	

Circuit Diagram



Package Outlines

Dimensions in mm

Weight: 180 g