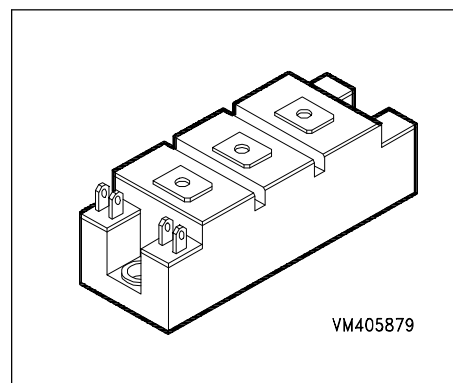


## IGBT Power Module

- Half-bridge
- Including fast free-wheeling diodes
- Package with insulated metal base plate



Type	$V_{CE}$	$I_C$	Package	Ordering Code
BSM 25 GB 120 DN2	1200V	38A	HALF-BRIDGE 1	C67076-A2109-A70

## Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	$V_{CE}$	1200	V
Collector-gate voltage	$V_{CGR}$	1200	
$R_{GE} = 20 \text{ k}\Omega$			
Gate-emitter voltage	$V_{GE}$	$\pm 20$	
DC collector current	$I_C$		A
$T_C = 25 \text{ }^\circ\text{C}$		38	
$T_C = 80 \text{ }^\circ\text{C}$		25	
Pulsed collector current, $t_p = 1 \text{ ms}$	$I_{Cpuls}$		
$T_C = 25 \text{ }^\circ\text{C}$		76	
$T_C = 80 \text{ }^\circ\text{C}$		50	
Power dissipation per IGBT	$P_{tot}$		W
$T_C = 25 \text{ }^\circ\text{C}$		200	
Chip temperature	$T_j$	+ 150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 ... + 125	
Thermal resistance, chip case	$R_{thJC}$	$\leq 0.6$	K/W
Diode thermal resistance, chip case	$R_{thJCD}$	$\leq 1$	
Insulation test voltage, $t = 1 \text{ min.}$	$V_{is}$	2500	Vac
Creepage distance	-	20	mm
Clearance	-	11	
DIN humidity category, DIN 40 040	-	F	sec
IEC climatic category, DIN IEC 68-1	-	40 / 125 / 56	

**Electrical Characteristics**, at  $T_j = 25\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**Static Characteristics**

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

**AC Characteristics**

Transconductance $V_{CE} = 20\text{ V}, I_C = 25\text{ A}$	$g_{fs}$	10	-	-	S
Input capacitance $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	$C_{iss}$	-	1.65	-	
Output capacitance $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	$C_{oss}$	-	0.25	-	nF
Reverse transfer capacitance $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	$C_{rss}$	-	0.11	-	