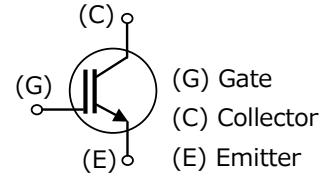




# MMJC5B0A01\*\*



### Outline

IGBT (Bare chip) utilizes various technologies that we cultivated by analog semiconductor device production and is the product which prepared a lineup of the wide high voltage, high current which can contribute to high efficiency and saving energy.

### Applications

- Industrial Motor Drivers
- Inverter
- Welding
- UPS

### Features

- ① Field Stop Trench gate IGBT
- ② Low Collector-Emitter saturation voltage
- ③ High short circuit capability
- ④ Low switching losses

### Absolute Maximum Ratings

T<sub>j</sub>=25deg unless otherwise noted.

Parameter	Symbol	Rating	Unit
Collector-Emitter voltage	VCES	1250	V
Gate-Emitter voltage	VGES	±30	V
Collector current *1)	IC	200	A
Junction temperature	T <sub>j</sub>	-40~+175	°C

\*1)Collector current is limited by T<sub>j</sub>(max) and thermal properties of assembly.

### Die Specification

Item	Value	Unit
Die thickness	140	μm
Die size	11.9x11.9(141.6)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.45	μm

### Electrical Characteristics

T<sub>j</sub>=25deg unless otherwise noted.

Parameter	Symbol	Specification			Unit	condition	
		Min	Typ	Max			
Zero gate voltage collector current	ICES	-	-	1	μA	V <sub>ce</sub> =1250V, V <sub>ge</sub> =0V	
Gate-Emitter leakage current	IGES	-	-	±500	nA	V <sub>ge</sub> =±30V, V <sub>ce</sub> =0V	
Gate-emitter threshold voltage	VGE(th)	5.00	-	6.80	V	V <sub>ce</sub> =10V, I <sub>c</sub> =6.7mA	
Collector-Emitter saturation voltage	VCE (sat)	T <sub>j</sub> =25°C	-	1.85	2.15	V	I <sub>c</sub> =200A, V <sub>ge</sub> =15V
		T <sub>j</sub> =175°C	-	2.25	-		
Input capacitance	Cies	-	20000	-	pF	V <sub>CE</sub> =25V, V <sub>GE</sub> =0V, f=1MHz	
Switching time *Reference characteristics	td(on)	-	53	-	ns	V <sub>cc</sub> =600V, I <sub>c</sub> =200A	
	tr	-	57	-	ns	V <sub>GE</sub> =-15/+15V, R <sub>g</sub> =5.1Ω,	
	td(off)	-	400	-	ns	Inductive load,	
	tf	-	210	-	ns	L <sub>s</sub> ≅110nH	
Short circuit withstand time	Tsc	10	-	-	μs	V <sub>cc</sub> =720V, V <sub>ge</sub> =15V, T <sub>j</sub> =150°C	

This characteristic is when it is incorporated in a mold package or evaluation board.

Depending on the assembly conditions etc., it may not be satisfied. Please note that it is not a guaranteed value.

### Die Dimension

