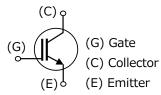


# **PRELIMINARY**

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 1250V / 200A

# MMJC5B0F00\*\*



#### 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 swiching losses

#### **Absolute Maximum Ratings**

Tj=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	Α
Junction temperature	Tj	-40~+175	$^{\circ}$

## Die Specification

Item	Value	Unit	
Die thickness	130	μm	
Die size	12.0x16.0(192.0)	mm	
Front metal(AlSi)	6.5	μm	
Backside metal(AlSi/Ti/Ni/Au)	1.45	μm	

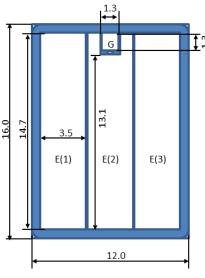
<sup>\*1)</sup>Collector current is limited by Tj(max) and thermal properties of assembly.

### **Electrical Characteristics**

Tj=25deg unless otherwise noted.

Parameter		Symbol	Specification		Unit	condition			
		3,111501	Min	Тур	Max	OTHE	condition		
Zero gate voltage collector current		ICES	-	-	2	μΑ	Vce=1250V,Vge=0V		
Gate-Emitter leakage current		IGES	-	-	±500	nA	Vge=±30V,Vce=0V		
Gate-emitter threshold voltage		VGE(th)	5.00	-	6.80	V	Vce=10V,Ic=7.4mA		
Collecter-Emitter	Tj=25℃	VCE	-	1.65	1.95				
saturation	Tj=150℃	VCE (sat)	-	1.85	-	V	Ic=200A,Vge=15V		
voltage	Tj=175℃		-	1.90	-				
Internal gate resistor		Rgint	-	3.3	-	Ω			
Input capacitance		Cies	-	17300	-	pF	VCE=25V,VGE=0V,		
Reverse transfer capcitance		Cres	-	610	-	pF	f=100kHz		
Switching time *Reference characteristics		td(on)	-	190	-	ns	Vcc=600V,Ic=200A		
		tr	-	41	-	ns	VGE=-15/+15V,		
		td(off)	-	400	-	ns	Rg=0.91Ω, Inductive load,		
		tf	-	145	-	ns	Ls≒100nH		
Short circuit withstand time		Tsc	10	-	-	μs	Vcc=800V,Vge=15V,Tj=150℃		

### **Die Dimension**



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.

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Mitsumi Electric CO.,LTD.

Semiconductor Business Division Strategy Engineering Department tel:+81-46-230-3470

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- When using the products, you will be asked to check their specifications.