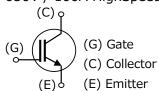


### **PRELIMINARY**

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 650V / 100A HighSpeed

# MMJ65A0G00\*\*



#### 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

## Absolute Maximum Ratings

Tj=25deg unless otherwise noted.

Parameter	Symbol	Rating	Unit
Collector-Emitter voltage	VCES	650	V
Gate-Emitter voltage	VGES	±30	٧
Collector current *1)	IC	100	Α
Junction temperature	Tj	-40~+175	ပ

#### **Features**

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

#### **Die Specification**

Item	Value	Unit
Die thickness	90	μm
Die size	6.0x9.0(54.0)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	μm

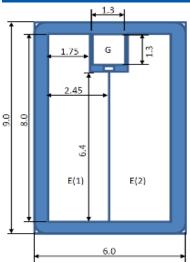
<sup>\*1)</sup>Collector current is limited by Tj(max) and thermal properties of assembly.

#### **Electrical Characteristics**

Tj=25deg unless otherwise noted.

Parameter		Symbol	Specification		Unit	condition	
		3,111501	Min	Тур	Max	Offic	condition
Zero gate voltage collector current		ICES	-	-	1	μΑ	Vce=650V,Vge=0V
Gate-Emitter leakage current		IGES	ı	-	±500	nA	Vge=±30V,Vce=0V
Gate-emitter threshold voltage		VGE(th)	5.20	-	6.60	V	Vce=10V,Ic=1.6mA
Collecter-Emitter	Tj=25℃	VCE	-	1.90	2.25		
saturation	Tj=150℃	VCE (sat)	-	2.40	-	V	Ic=100A,Vge=15V
voltage	Tj=175℃		-	2.50	-		
Internal gate resistor		Rgint	-	1.70	-	Ω	
Input capacitance		Cies	-	8500	-	pF	VCE=25V,VGE=0V,
Reverse transfer capcitance		Cres	-	110	-	pF	f=100kHz
Switching time *Reference characteristics		td(on)	-	65	-	ns	Vcc=300V,Ic=100A
		tr	-	40	-	ns	VGE=-15/+15V,
		td(off)	-	160	-	ns	Rg=8.2Ω, Inductive load,
		tf	-	45	-	ns	Ls≒100nH
Short circuit withstand time		Tsc	5	-	-	μs	Vcc=400V,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.

### MinebeaMitsumi Passion to Create Value through Difference



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