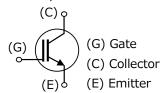


# **PRELIMINARY**

Power Semiconductor Device IGBT (Insulated Gate Bipolar Transistor) MI-Series 1200V/150A LowNoise

# MMJC0A5J00\*\*



#### 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	1200	V
Gate-Emitter voltage	VGES	±30	V
Collector current *1)	IC	150	Α
Junction temperature	Tj	-40~+175	$^{\circ}$

#### **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	130	μm
Die size	11.4x12.36(140.9)	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		
		5,111501	Min	Тур	Max	0.110	COTTAILIOTT	
Zero gate voltage collector current		ICES	-	ı	1.5	μΑ	Vce=1200V,Vge=0V	
Gate-Emitter leakage current		VGES	-	-	±500	nA	Vge=±30V,Vce=0V	
Gate-emitter threshold voltage		VGE(th)	5.20	-	6.60	V	Vce=10V,Ic=5.7mA	
Collecter-Emitter	Tj=25℃	VCE	-	1.70	2.05			
saturation	Tj=150℃	VCE	-	2.00	-	V	Ic=150A,Vge=15V	
voltage	Tj=175℃	(sat)	-	2.10	-			
Internal gate resistor		Rgint	-	5.0	-	Ω		
Input capacitance		Cies	-	12500	-	pF	VCE=25V,VGE=0V,	
Reverse transfer of	capcitance	Cres	-	160	-	pF	f=100kHz	
			-	150	-	ns	Vcc=600V,Ic=150A	
Switching time *Reference characteristics		tr	-	42	-	ns	VGE=-15/+15V,	
		td(off)	-	290	-	ns	Rg=1.1Ω, Inductive load,	
		tf	-	170	-	ns	Ls≒100nH	
Short circuit with	stand time	Tsc	10	-	-	μs	Vcc=800V,Vge=15V,Tj=150℃	

G E(1) E(2) E(3)

11.4

**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



https://mtm-sec.mitsumi.co.jp/web/ic/

Mitsumi Electric CO.,LTD.

Semiconductor Business Division

tel:+81-46-230-3470

- Any products mentioned this leaflet are subject to any modification in their appearance and others for improvements without prior notification.
- The details listed here are not a guarantee of the individual products at the time of ordering.
- When using the products, you will be asked to check their specifications.