

PRELIMINARY

Power Semiconductor Device IGBT (Insulated Gate Bipolar Transistor)

MI-Series 1200V/50A LowNoise

MMJC050J00**

(G) Gate (C) Collector (E) Emitter

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	1200	V
Gate-Emitter voltage	VGES	±30	V
Collector current *1)	IC	50	Α
Junction temperature	Tj	-40~+175	\mathbb{C}

Die Specification

Item	Value	Unit
Die thickness	130	μm
Die size	6.8x7.18(48.8)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.45	μm

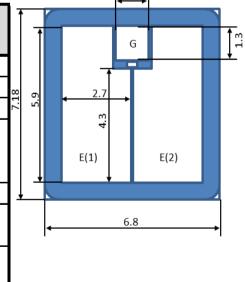
^{*1)}Collector current is limited by Tj(max) and thermal properties of assembly.

Electrical Characteristics

Ti:	=25dea	unless	otherwise	noted.
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Parameter		Symbol	Specification		cification		t condition	
		3,50.	Min	Тур	Max	Offic	condition	
Zero gate voltage collector current		ICES	-	-	1	μΑ	Vce=1200V,Vge=0V	
Gate-Emitter leakage current		VGES	ı	ı	±500	nA	Vge=±30V,Vce=0V	
Gate-emitter threshold voltage		VGE(th)	5.20	ı	6.60	V	Vce=10V,Ic=1.7mA	
Collecter-Emitter	Tj=25℃	VCE	-	1.70	2.05			
saturation	Tj=150℃	VCE (sat)	-	2.00	-	V	Ic=50A,Vge=15V	
voltage	Tj=175℃	(Sat)	-	2.10	-			
Internal gate resi	stor	Rgint	-	4.0	-	Ω		
Input capacitance		Cies	-	3600	-	pF	VCE=25V,VGE=0V,	
Reverse transfer capcitance		Cres	ı	50	-	pF	f=100kHz	
Switching time *Reference characteristics		td(on)	-	50	-	ns	Vcc=600V,Ic=50A	
		tr	-	32	-	ns	VGE=-15/+15V,	
		td(off)	-	200	-	ns	Rg=15Ω, Inductive load,	
		tf	-	190	-	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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https://mtm-sec.mitsumi.co.jp/web/ic/

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- 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.