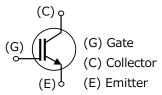


PRELIMINARY

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 1250V / 150A

MMJC5A5F00**



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

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

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

Electrical Characteristics

Tj=25deg unless otherwise noted.

Parameter		Symbol	Specification		Unit	condition		
		Symbol	Min	Тур	Max	Offic	corraction	
Zero gate voltage collector current		ICES	-	-	1.5	μΑ	Vce=1250V,Vge=0V	
Gate-Emitter leakage current		IGES	ı	-	±500	nA	Vge=±30V,Vce=0V	
Gate-emitter threshold voltage		VGE(th)	5.00	-	6.80	V	Vce=10V,Ic=5.7mA	
Collecter-Emitter	Tj=25℃	VCE	-	1.65	1.95	٧		
saturation	Tj=150℃	VCE (sat)	-	1.85	-		Ic=150A,Vge=15V	
voltage	Tj=175℃		-	1.90	-			
Internal gate resistor		Rgint	-	5.0	-	Ω		
Input capacitance		Cies	-	12600	-	pF	VCE=25V,VGE=0V,	
Reverse transfer capcitance		Cres	-	450	-	pF	f=100kHz	
Switching time *Reference characteristics		td(on)	-	160	-	ns	Vcc=600V,Ic=150A	
		tr	-	36	-	ns	VGE=-15/+15V,	
		td(off)	-	350	-	ns	Rg=1.1Ω, Inductive load,	
		tf	-	155	-	ns	Ls≒100nH	
Short circuit withstand time		Tsc	10	-	-	μs	Vcc=800V,Vge=15V,Tj=150℃	

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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.