

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MMJ6515B00**

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

I j=25deg unless otherwise noted.						
Parameter	Symbol	Rating	Unit			
Collector-Emitter voltage	VCES	650	V			
Gate-Emitter voltage	VGES	±30	V			
Collector current *1)	IC	15	А			
Junction temperature	Tj	-40~+150	°C			

Features

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

Die Specification

Item	Value	Unit
Die thickness	86	μm
Die size	2.9x2.9(8.41)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	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			
		Min	Тур	Max	orne	condition			
Zero gate voltage collector current	ICES	-	-	1	μA	Vce=650V,Vge=0V			
Gate-Emitter leakage current	IGES	-	I	±100	nA	Vge=±30V,Vce=0V			
Gate-emitter threshold voltage	VGE(th)	4.0	-	6.0	V	Vce=10V,Ic=0.5mA			
Collecter-Emitter saturation voltage	VCE (sat)	-	1.65	1.95	V	Ic=15A,Vge=15V			
Input capacitance	Cies	-	700	-	pF	VCE=25V,VGE=0V, f=100kHz			
Reverse transfer capcitance	Cres	-	35	-	pF				
	td(on)	-	40	-	ns	Vcc=330V,Ic=15A VGE=15/0V,Tj=150℃ Rg(on/off)=18Ω/41Ω,			
Switching time	tr	-	35	-	ns				
*Reference characteristics	td(off)	-	210	-	ns				
	tf	-	165	-	ns	Inductive load			
Short circuit withstand time	Tsc	5	-	-	μs	Vcc=400V,Vge=15V,Tj=150℃			

Die Dimension

PRELIMINARY

(G) Gate

(C) Collector

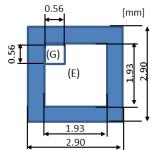
(E) Emitter

(C) o

(E)

MR-Series 650V / 15A

(G)



This characteristic is when it is incorporated in a mold package or evaluation board.

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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

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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.

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Semiconductor Business Division Strategy Engineering Department