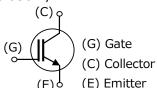


### **PRELIMINARY**

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MR-Series 650V / 12A



# MMJ6512B00\*\*

#### 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	650	V
Gate-Emitter voltage	VGES	±30	٧
Collector current *1)	IC	12	Α
Junction temperature	Tj	-40~+150	$^{\circ}$

#### **Die Specification**

Item	Value	Unit
Die thickness	86	μm
Die size	2.7x2.7(7.29)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	μm

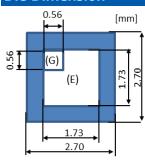
<sup>\*1)</sup>Collector current is limited by Tj(max) and thermal properties of assembly.

#### **Electrical Characteristics**

Tj=25deg unless otherwise noted.

Parameter	Symbol	Specification		Unit	condition		
	3,111301	Min	Тур	Max	0.110	55.74.657	
Zero gate voltage collector current	ICES	-	-	1	μΑ	Vce=650V,Vge=0V	
Gate-Emitter leakage current	IGES	-	ı	±100	nA	Vge=±30V,Vce=0V	
Gate-emitter threshold voltage	VGE(th)	4.0	-	6.0	V	Vce=10V,Ic=0.4mA	
Collecter-Emitter saturation voltage	VCE (sat)	-	1.65	1.95	٧	Ic=12A,Vge=15V	
Input capacitance	Cies	-	600	-	pF	VCE=25V,VGE=0V,	
Reverse transfer capcitance	Cres	-	30	-	pF	f=100kHz	
	td(on)	-	40	-	ns	Vcc=330V,Ic=12A VGE=15/0V,Tj=150℃ Rg(on/off)=22Ω/51Ω,	
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**



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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