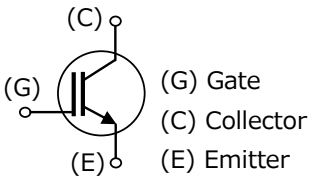
MITSUMI

PRELIMINARY

Power Semiconductor IGBT (Insulated Gate Bipolar Transistor) MR-Series 650V / 25A

MMJ6525B00**



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	V
Collector current *1)	IC	25	A
Junction temperature	Tj	-40～+150	℃

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

Die Specification

Item	Value	Unit
Die thickness	86	μm
Die size	3.38x3.38(11.42)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	μm

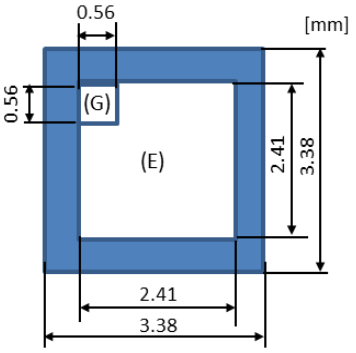
Electrical Characteristics

Tj=25deg unless otherwise noted.

Parameter	Symbol	Specification			Unit	condition
		Min	Typ	Max		
Zero gate voltage collector current	ICES	-	-	1	μA	Vce=650V,Vge=0V
Gate-Emitter leakage current	IGES	-	-	±100	nA	Vge=±30V,Vce=0V
Gate-emitter threshold voltage	VGE(th)	4.0	-	6.0	V	Vce=10V,Ic=0.8mA
Collecter-Emitter saturation voltage	VCE (sat)	-	1.6	1.9	V	Ic=25A,Vge=15V
Input capacitance	Cies	-	960	-	pF	VCE=25V,VGE=0V, f=100kHz
Reverse transfer capcitance	Cres	-	48	-	pF	
Switching time *Reference characteristics	td(on)	-	50	-	ns	Vcc=330V,Ic=25A VGE=15/0V,Tj=150℃ Rg(on/off)=15Ω/41Ω, Inductive load
	tr	-	45	-	ns	
	td(off)	-	300	-	ns	
	tf	-	100	-	ns	
Short circuit withstand time	Tsc	5	-	-	μs	Vcc=400V,Vge=15V,Tj=150℃

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.

Die Dimension



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