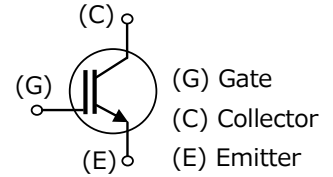




Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 650V / 75A

# MMJ6575F00\*\*



### 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 switching losses

### Absolute Maximum Ratings

T<sub>j</sub>=25deg unless otherwise noted.

Parameter	Symbol	Rating	Unit
Collector-Emitter voltage	V <sub>CES</sub>	650	V
Gate-Emitter voltage	V <sub>GES</sub>	±30	V
Collector current *1)	I <sub>C</sub>	75	A
Junction temperature	T <sub>j</sub>	-40~+175	°C

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

### Die Specification

Item	Value	Unit
Die thickness	90	μm
Die size	5.9x6.6(38.9)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	μm

### Electrical Characteristics

T<sub>j</sub>=25deg unless otherwise noted.

Parameter	Symbol	Specification			Unit	condition	
		Min	Typ	Max			
Zero gate voltage collector current	I <sub>CES</sub>	-	-	1	μA	V <sub>ce</sub> =650V, V <sub>ge</sub> =0V	
Gate-Emitter leakage current	I <sub>GES</sub>	-	-	±500	nA	V <sub>ge</sub> =±30V, V <sub>ce</sub> =0V	
Gate-emitter threshold voltage	V <sub>GE(th)</sub>	5.20	-	6.60	V	V <sub>ce</sub> =10V, I <sub>c</sub> =1.2mA	
Collector-Emitter saturation voltage	V <sub>CE(sat)</sub>	T <sub>j</sub> =25°C	-	1.55	1.85	V	I <sub>c</sub> =75A, V <sub>ge</sub> =15V
		T <sub>j</sub> =150°C	-	1.85	-		
		T <sub>j</sub> =175°C	-	1.95	-		
Internal gate resistor	R <sub>gint</sub>	-	1.70	-	Ω		
Input capacitance	C <sub>ies</sub>	-	5200	-	pF	V <sub>CE</sub> =25V, V <sub>GE</sub> =0V, f=100kHz	
Reverse transfer capacitance	C <sub>res</sub>	-	80	-	pF		
Switching time *Reference characteristics	t <sub>d(on)</sub>	-	50	-	ns	V <sub>cc</sub> =300V, I <sub>c</sub> =75A	
	t <sub>r</sub>	-	35	-	ns	V <sub>GE</sub> =-15/+15V, R <sub>g</sub> =8.2Ω, Inductive load, L <sub>s</sub> ≒100nH	
	t <sub>d(off)</sub>	-	170	-	ns		
	t <sub>f</sub>	-	200	-	ns		
Short circuit withstand time	T <sub>sc</sub>	10	-	-	μs	V <sub>cc</sub> =400V, V <sub>ge</sub> =15V, T <sub>j</sub> =150°C	

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

