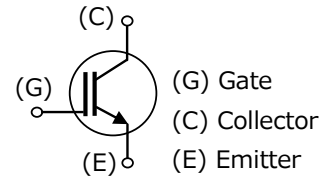




Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 1250V / 50A

MMJC550F00**



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_j=25deg unless otherwise noted.

Parameter	Symbol	Rating	Unit
Collector-Emitter voltage	V _{CE} S	1250	V
Gate-Emitter voltage	V _{GE} S	±30	V
Collector current *1)	I _C	50	A
Junction temperature	T _j	-40~+175	°C

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

Die Specification

Item	Value	Unit
Die thickness	130	μm
Die size	6.8x7.18(48.8)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.45	μm

Electrical Characteristics

T_j=25deg unless otherwise noted.

Parameter	Symbol	Specification			Unit	condition	
		Min	Typ	Max			
Zero gate voltage collector current	I _{CE} S	-	-	1.00	μA	V _{ce} =1250V, V _{ge} =0V	
Gate-Emitter leakage current	I _{GE} S	-	-	±500	nA	V _{ge} =±30V, V _{ce} =0V	
Gate-emitter threshold voltage	V _{GE} (th)	5.00	-	6.80	V	V _{ce} =10V, I _c =1.7mA	
Collector-Emitter saturation voltage	V _{CE} (sat)	T _j =25°C	-	1.65	1.95	V	I _c =50A, V _{ge} =15V
		T _j =150°C	-	1.85	-		
		T _j =175°C	-	1.90	-		
Internal gate resistor	R _{gint}	-	4.0	-	Ω		
Input capacitance	C _{ies}	-	3800	-	pF	V _{CE} =25V, V _{GE} =0V, f=100kHz	
Reverse transfer capacitance	C _{res}	-	140	-	pF		
Switching time *Reference characteristics	td(on)	-	95	-	ns	V _{cc} =600V, I _c =50A	
	tr	-	26	-	ns	V _{GE} =-15/+15V, R _g =15Ω, Inductive load, L _s ≒100nH	
	td(off)	-	240	-	ns		
	tf	-	175	-	ns		
Short circuit withstand time	T _{sc}	10	-	-	μs	V _{cc} =800V, V _{ge} =15V, T _j =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

