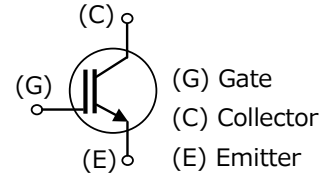




Power Semiconductor IGBT (Insulated Gate Bipolar Transistor)

MI-Series 750V / 275A

MMJ75B8F00**



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	750	V
Gate-Emitter voltage	V _{GE} S	±20	V
Collector current *1)	I _C	275	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	90	μm
Die size	10.6x10.6(112.4)	mm
Front metal(AlSi)	6.5	μm
Backside metal(AlSi/Ti/Ni/Au)	1.25	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	μA	V _{ce} =750V, V _{ge} =0V	
Gate-Emitter leakage current	I _{GE} S	-	-	±500	nA	V _{ge} =±20V, V _{ce} =0V	
Gate-emitter threshold voltage	V _{GE} (th)	5.10	-	6.50	V	V _{ce} =10V, I _c =3.2mA	
Collector-Emitter saturation voltage	V _{CE} (sat)	T _j =25°C	-	1.30	1.60	V	I _c =275A, V _{ge} =15V
		T _j =150°C	-	1.45	-		
		T _j =175°C	-	1.50	-		
Internal gate resistor	R _{gint}	-	1.7	-	Ω		
Input capacitance	C _{ies}	-	15000	-	pF	V _{CE} =25V, V _{GE} =0V, f=100kHz	
Reverse transfer capacitance	C _{res}	-	300	-	pF		
Switching time *Reference characteristics	t _d (on)	-	150	-	ns	V _{cc} =400V, I _c =150A	
	t _r	-	52	-	ns	V _{GE} =-8V/+15V, R _g (on/off)=6.8Ω/15.0Ω, Inductive load, L _s ≒100nH	
	t _d (off)	-	600	-	ns		
	t _f	-	200	-	ns		
Short circuit withstand time	T _{sc}	3	-	-	μs	V _{cc} =450V, V _{ge} =15V, T _j =175°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

