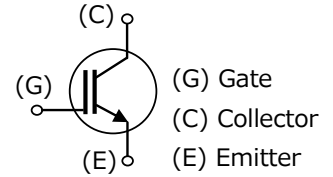




MMJC5A5A01**



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 | VCES | 1250 | V |
| Gate-Emitter voltage | VGES | ±30 | V |
| Collector current *1) | IC | 150 | 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 | 140 | μm |
| Die size | 10.5x10.5(110.3) | 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 | ICES | - | - | 1 | μA | V _{ce} =1250V, V _{ge} =0V | |
| Gate-Emitter leakage current | IGES | - | - | ±500 | nA | V _{ge} =±30V, V _{ce} =0V | |
| Gate-emitter threshold voltage | VGE(th) | 5.00 | - | 6.80 | V | V _{ce} =10V, I _c =5.0mA | |
| Collector-Emitter saturation voltage | VCE (sat) | T _j =25°C | - | 1.85 | 2.15 | V | I _c =150A, V _{ge} =15V |
| | | T _j =175°C | - | 2.25 | - | | |
| Input capacitance | Cies | - | 15000 | - | pF | VCE=25V, VGE=0V, f=1MHz | |
| Switching time *Reference characteristics | td(on) | - | 45 | - | ns | V _{cc} =600V, I _c =150A VGE=-15/+15V, Rg=6.8Ω, Inductive load, Ls≒110nH | |
| | tr | - | 50 | - | ns | | |
| | td(off) | - | 350 | - | ns | | |
| | tf | - | 230 | - | ns | | |
| Short circuit withstand time | Tsc | 10 | - | - | μs | V _{cc} =720V, 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

