

IGBT Dual Transistor

MG300J2YS50

600V / 300A

DATASHEET

OEM – Toshiba

Source: Toshiba Databook 1995/96

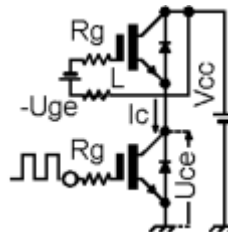
MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|------------------------------------|-----|--------|-----------------|------|
| Collector-Emitter Voltage | | Vces | 600 | V |
| Gate-Emitter Voltage | | Vges | +/-20 | V |
| Collector Current | DC | IC | 300 | A |
| | 1ms | Icp | 600 | A |
| Forward Current | DC | If | 300 | A |
| | 1ms | Ifm | 600 | A |
| Collector Power Dissipation | | Pc | 1300 | W |
| Junction Temperature | | Tj | 150 | °C |
| Storage Temperature Range | | Tstg | -40~125 | °C |
| Isolation Voltage | | Visol | 2500 (AC 1min.) | V |
| Screw Torque (Terminal / Mounting) | | - | 3/3 | N*m |

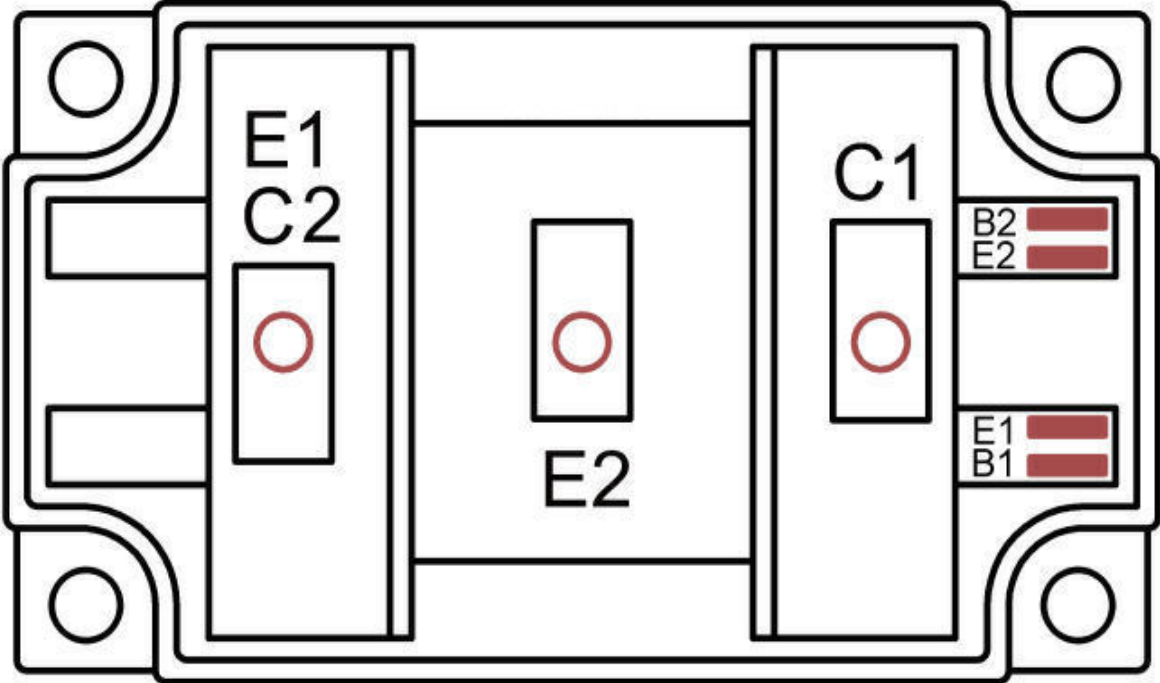
ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTICS | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------|------------|--|------|-------|-------|------|
| Gate Leakage Current | | Iges | Uge=+/-20V, Vce=0 | - | - | +500 | nA |
| Collector Cut-off Current | | Ices | Uce=600V, Uge=0 | - | - | 2.0 | mA |
| Gate-Emitter Cut-off Voltage | | Uge (off) | Ic=30mA, Uce=5V | 5.0 | 7.0 | 8.0 | V |
| Collector-Emitter Saturation Voltage | | Uce (sat) | IC=300A, Uge=15V | - | 2.1 | 2.7 | V |
| Input Capacitance | | Cies | Uce=10V, Uge=0, f=1MHz | - | 30800 | - | pF |
| Switching Time | Turn-on Delay | td(on) | Inductive Load Vcc=300V, Ic=300A, Uge=+/-15V, Rg=1.8R (Note1) | - | 0.20 | 0.40 | uS |
| | Rise Time | tr | | - | 0.15 | 0.30 | |
| | Turn-on Time | ton | | - | 0.60 | 1.20 | |
| | Turn-off Delay | td (off) | | - | 0.20 | 0.40 | |
| | Fall Time | tf | | - | 0.15 | 0.30 | |
| | Turn-off Time | toff | | - | 0.50 | 1.00 | |
| Forward Voltage | | Vf | If=300A, Uge=0 | - | 2.30 | 3.00 | V |
| Reverse Recovery Time | | trr | If=300A, Uge=-10V di/dt=400A/uS | - | 0.08 | 0.15 | uS |
| Thermal Resistance | Rth (j-c) | Transistor | | - | - | 0.096 | °C/W |
| | | Diode | | - | - | 0.20 | |

Note 1



2-109C1A



EQUIVALENT CIRCUIT

