

TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

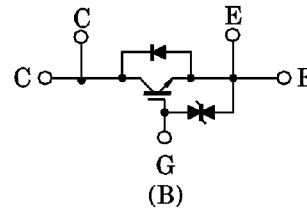
MG600Q1US41

HIGH POWER SWITCHING APPLICATIONS.

MOTOR CONTROL APPLICATIONS.

- High Input Impedance
- High Speed : $t_f = 0.5\mu s$ (Max.)
- Low Saturation Voltage : $V_{CE(sat)} = 4.0V$ (Max.)
- Enhancement-Mode
- Outline : TOSHIBA 2-109E1A
(See page 3 for the device outline)
- Weight : 590g (TYP.)

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---|-----|------------|--------------------|------|
| Collector-Emitter Voltage | | V_{CES} | 1200 | V |
| Gate-Emitter Voltage | | V_{GES} | ± 20 | V |
| Collector Current | DC | I_C | 600 | A |
| | 1ms | I_{CP} | 1200 | |
| Forward Current | DC | I_F | 600 | A |
| | 1ms | I_{FM} | 1200 | |
| Collector Power Dissipation (Tc = 25°C) | | P_C | 3600 | W |
| Junction Temperature | | T_j | 150 | °C |
| Storage Temperature Range | | T_{stg} | -40~125 | °C |
| Isolation Voltage | | V_{Isol} | 2500 (AC 1 minute) | V |
| Screw Torque (Terminal : M4 / M6 / Mounting) | | — | 2 / 3 / 3 | N·m |

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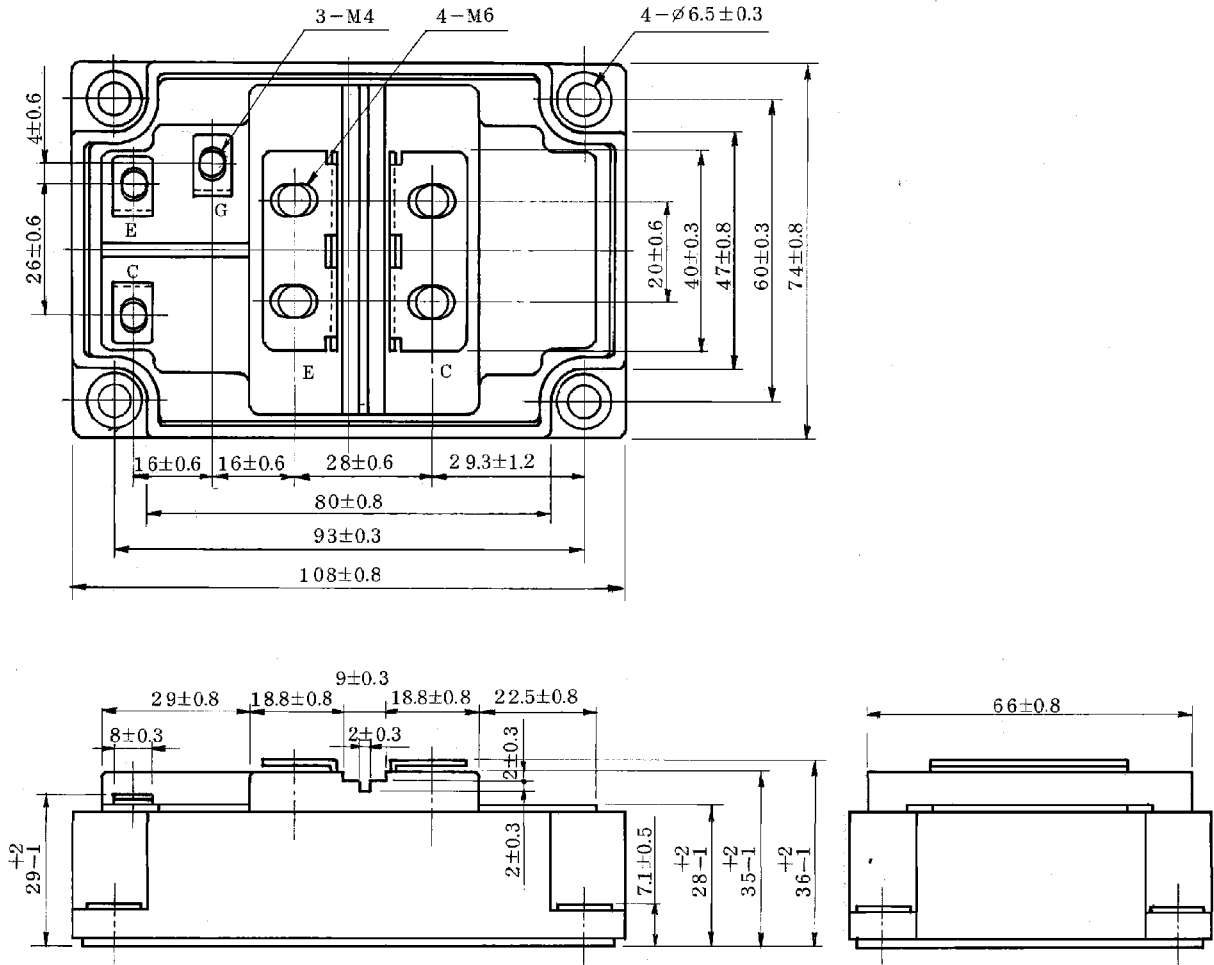
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---------------|----------------------|---|------|-------|-------|--------|
| Gate Leakage Current | | I _{GES} | V _{GE} = ±20V, V _{CE} = 0 | — | — | ±60 | μA |
| Collector Cut-off Current | | I _{CES} | V _{CE} = 1200V, V _{GE} = 0 | — | — | 6.0 | mA |
| Gate-Emitter Cut-off Voltage | | V _{GE(OFF)} | I _C = 600mA, V _{CE} = 5V | 3.0 | — | 8.0 | V |
| Collector-Emitter Saturation Voltage | | V _{CE(sat)} | I _C = 600A, V _{GE} = 15V | — | 3.0 | 4.0 | V |
| Input Capacitance | | C _{ies} | V _{CE} = 10V, V _{GE} = 0, f = 1MHz | — | 72000 | — | pF |
| Switching Time | Rise Time | t _r | | — | 0.3 | 0.6 | μs |
| | Turn-on Time | t _{on} | | — | 0.4 | 0.8 | |
| | Fall Time | t _f | | — | 0.2 | 0.5 | |
| | Turn-off Time | t _{off} | | — | 0.8 | 1.5 | |
| Forward Voltage | | V _F | I _F = 600A, V _{GE} = 0 | — | 2.3 | 3.2 | V |
| Reverse Recovery Time | | t _{rr} | I _F = 600A, V _{GE} = -10V di / dt = 1000A / μs | — | 0.25 | — | μs |
| Thermal Resistance | | R _{th(j-c)} | Transistor | — | — | 0.035 | °C / W |
| | | | Diode | — | — | 0.125 | |

OUTLINE : TOSHIBA 2-109E1A

Unit in mm



Weight : 590g (TYP.)

