

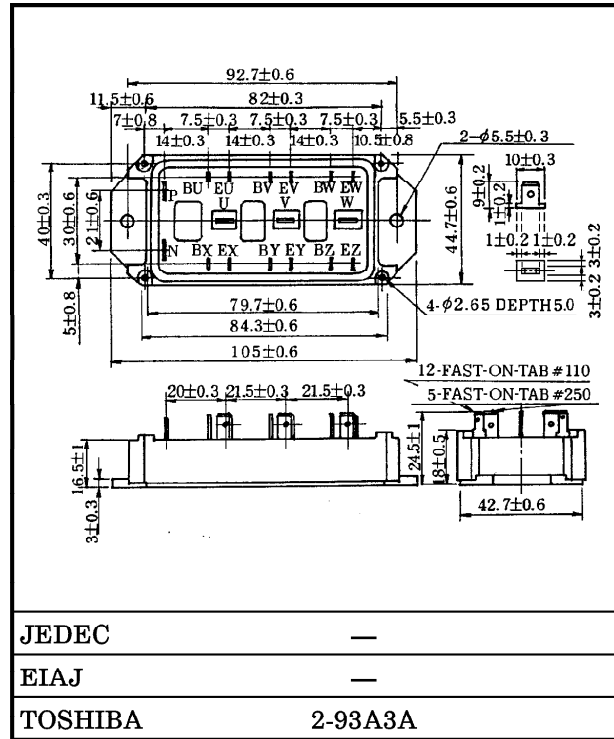
TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

MG15Q6ES42

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

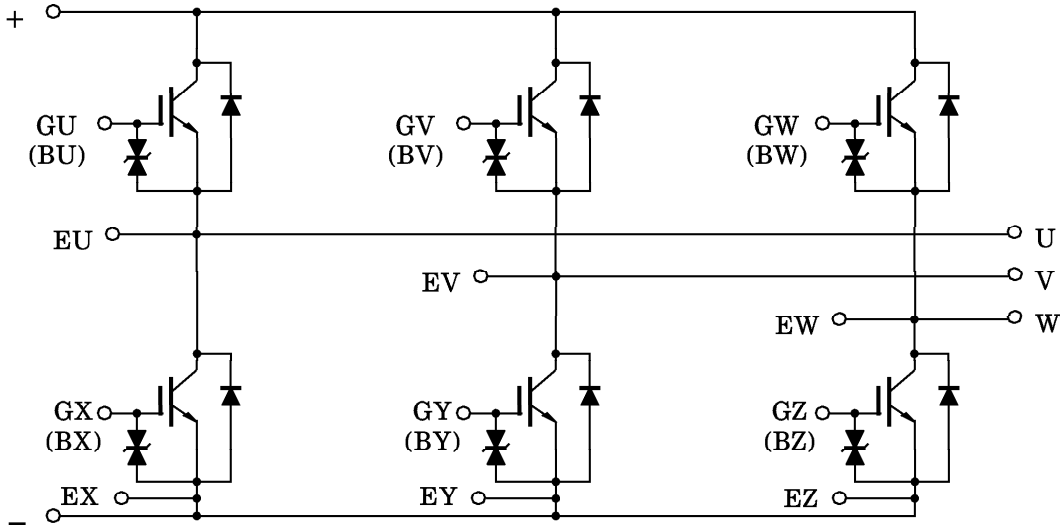
Unit in mm

- The Electrodes are Isolated from Case.
- 6 IGBTs are Built Into 1 Package.
- Enhancement-Mode
- Low Saturation Voltage
: $V_{CE(sat)} = 4.0V$ (Max.)
- High Speed : $t_f = 0.5\mu s$ (Max.)
 $t_{rr} = 0.5\mu s$ (Max.)



Weight : 220g

EQUIVALENT CIRCUIT



961001EAA2

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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 | 15 | A |
| | 1ms | I _{CP} | 30 | |
| Forward Current | DC | I _F | 15 | A |
| | 1ms | I _{FM} | 30 | |
| Collector Power Dissipation | | P _C | 125 | 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 | | — | 3 | N·m |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------------|----------------------|---|------|------|--------|------|
| Gate Leakage Current | | I _{GES} | V _{GE} = ±20V, V _{CE} = 0 | — | — | ±10 | μA |
| Collector Cut-off Current | | I _{CES} | V _{CE} = 1200V, V _{GE} = 0 | — | — | 1.0 | mA |
| Gate-Emitter Cut-off Voltage | | V _{GE(OFF)} | I _C = 15mA, V _{CE} = 5V | 3.0 | — | 6.0 | V |
| Collector-Emitter Saturation Voltage | | V _{CE(sat)} | I _C = 15A, V _{GE} = 15V | — | 3.0 | 4.0 | V |
| Input Capacitance | | C _{ies} | V _{CE} = 10V, V _{GE} = 0, f = 1MHz | — | 1800 | — | 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 | | — | 0.25 | 0.5 | |
| | Turn-off Time | t _{off} | | — | 0.8 | 1.5 | |
| Forward Voltage | | V _F | I _F = 15A, V _{GE} = 0 | — | 1.8 | 2.5 | V |
| Reverse Recovery Time | | t _{rr} | I _F = 15A, V _{GE} = -10V di / dt = 100A / μs | — | 0.2 | 0.5 | μs |
| Thermal Resistance | R _{th(j-c)} | Transistor | — | — | 1.0 | °C / W | |
| | | Diode | — | — | 1.8 | | |

