

GTR Module

Silicon N Channel IGBT

High Power Switching Applications

Motor Control Applications

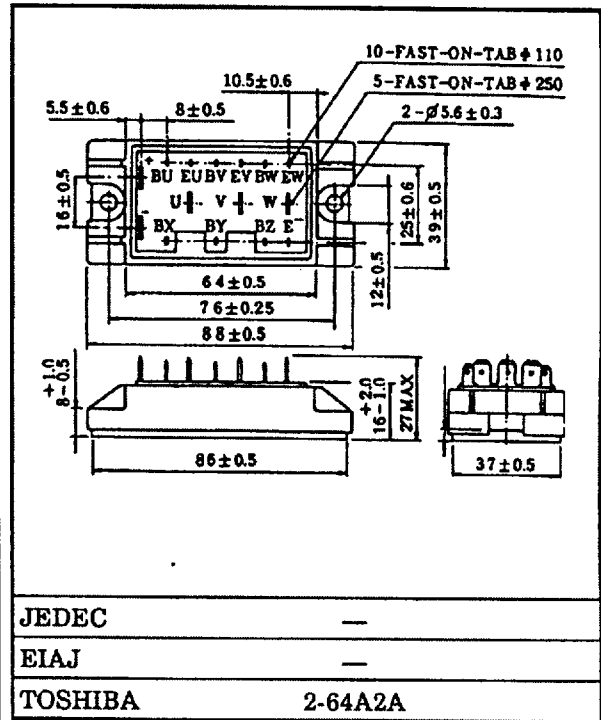
Features

- 6 IGBTs are built into 1 package
- High speed: $t_f = 0.35\mu\text{s}$ (Max.) ($I_C = 15\text{A}$)
 $t_{rr} = 0.15\mu\text{s}$ (Max.) ($I_C = 15\text{A}$)
- Low saturation voltage: $V_{CE(sat)} = 3.5\text{V}$ (Max.) ($I_F = 15\text{A}$)
- Enhancement mode
- The electrodes are isolated from case

Maximum Ratings ($T_c = 25^\circ\text{C}$)

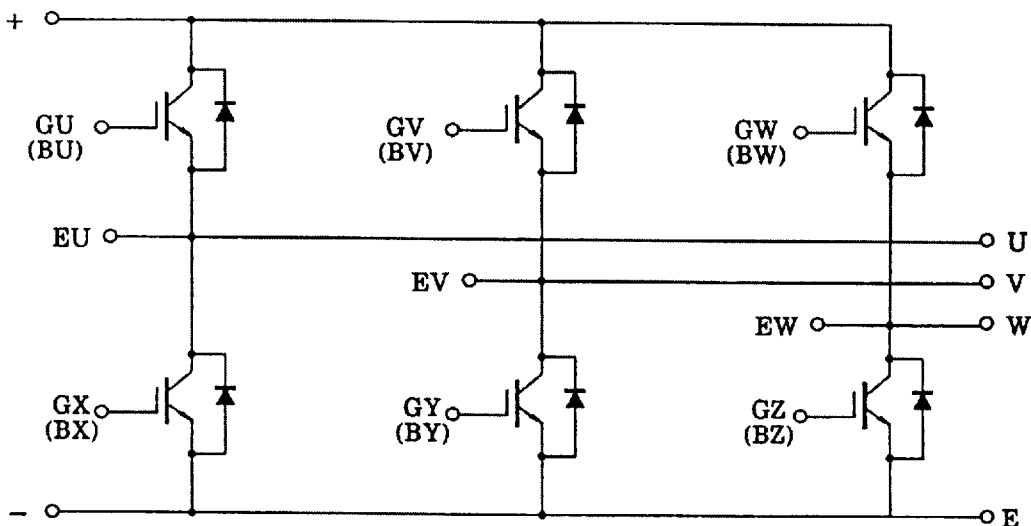
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------|-----------------------|------------------|
| Collector-Emitter Voltage | V_{CES} | 600 | V |
| Gate-Emitter Voltage | V_{GES} | ± 20 | V |
| Collector Current | DC | I_C | 15 |
| | 1ms | I_{CP} | 30 |
| Forward Current | DC | I_F | 15 |
| | 1ms | I_{FM} | 30 |
| Collector Power Dissipation | P_C | 80 | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -40 ~ 125 | $^\circ\text{C}$ |
| Isolation Voltage | V_{isol} | 2500 (AC 1 Minute) | V |
| Screw Torque | — | 3 | N ¥ m |

Unit in mm



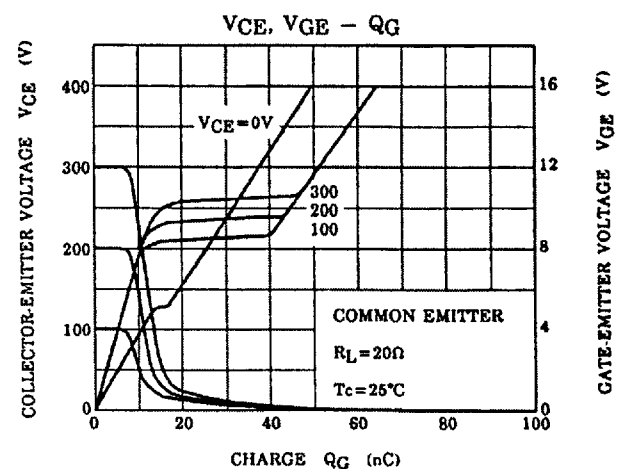
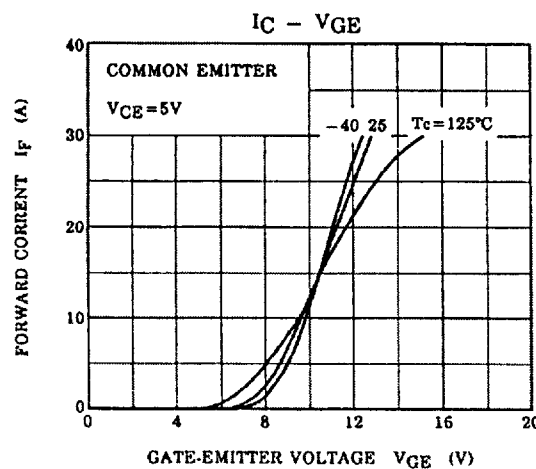
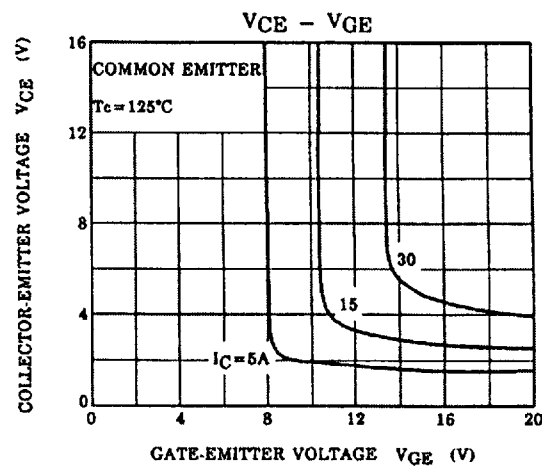
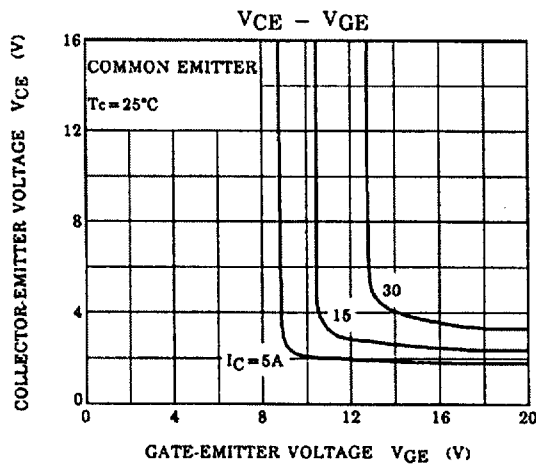
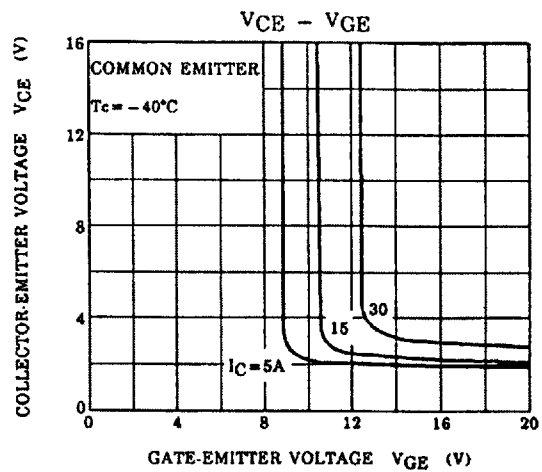
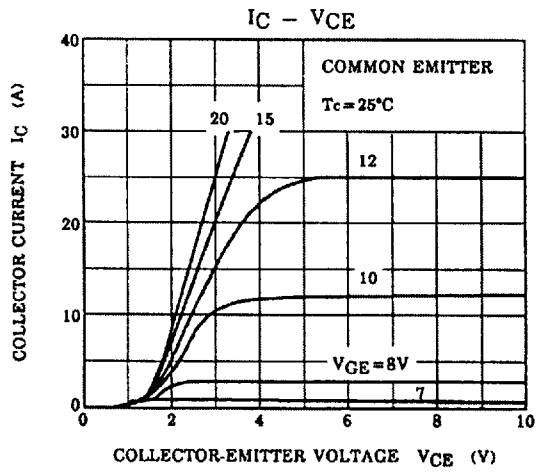
Weight : 152g

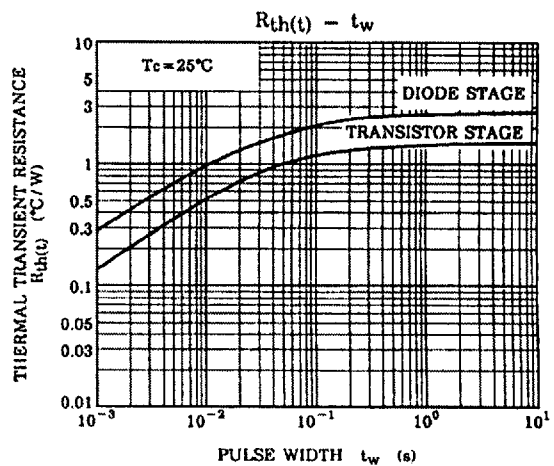
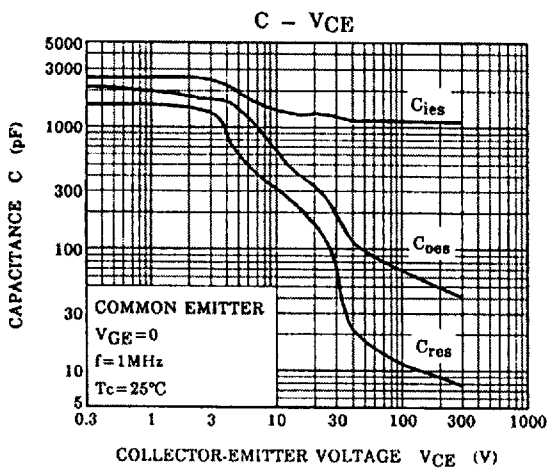
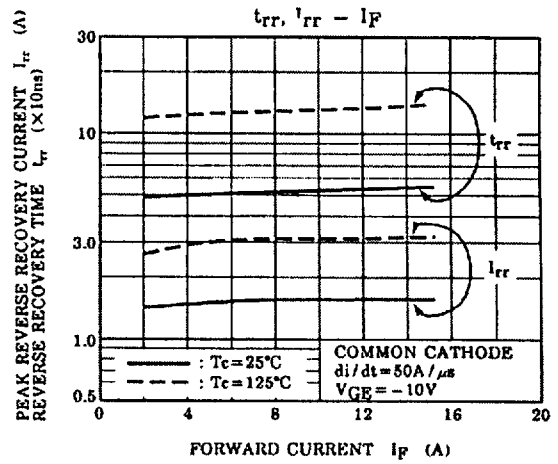
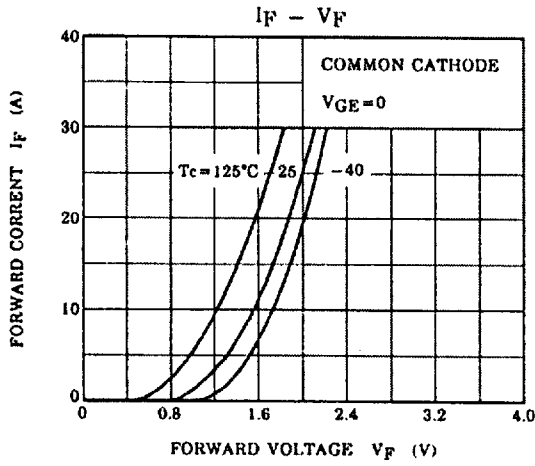
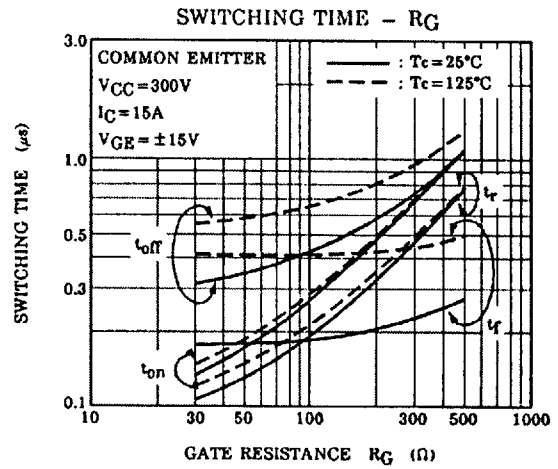
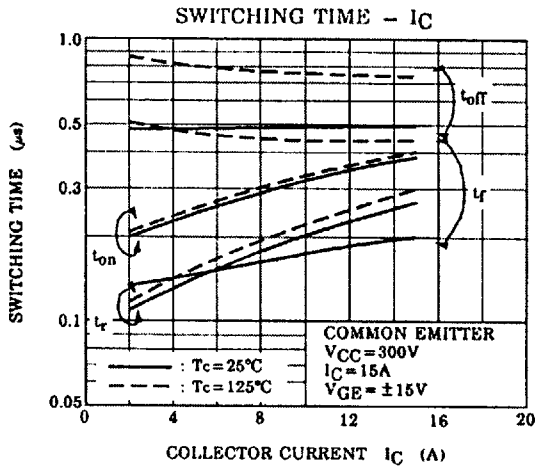
Equivalent Circuit

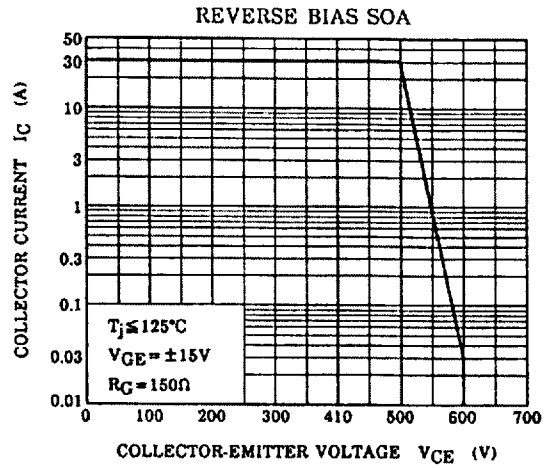
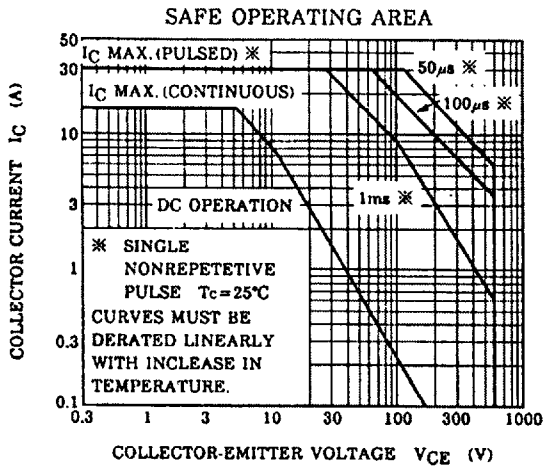


Electrical Characteristics (Tc = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---------------|------------------|---|------|------|-----------|------|
| Gate Leakage Current | | I_{GES} | $V_{GE} = \pm 20V, V_{CE} = 0$ | — | — | ± 500 | nA |
| Collector Cut-off Current | | I_{CES} | $V_{CE} = 600V, V_{GE} = 0$ | — | — | 1.0 | mA |
| Collector-Emitter Breakdown Voltage | | $V_{(BR) CES}$ | $I_C = 10mA, V_{GE} = 0$ | 600 | — | — | V |
| Gate-Emitter Cut-off Voltage | | $V_{GE (OFF)}$ | $I_C = 15mA, V_{CE} = 5V$ | 3.0 | — | 6.0 | V |
| Collector-Emitter Saturation Voltage | | $V_{CE (sat)}$ | $I_C = 15A, V_{GE} = 15V$ | — | 2.7 | 3.5 | V |
| Input Capacitance | | C_{ies} | $V_{CE} = 10V, V_{GE} = 0, f = 1MHz$ | — | 1400 | — | pF |
| Switching Time | Rise Time | t_r | | — | 0.30 | 0.60 | μs |
| | Turn-on Time | t_{on} | | — | 0.40 | 0.80 | |
| | Fall Time | t_f | | — | 0.18 | 0.35 | |
| | Turn-off Time | t_{off} | | — | 0.60 | 1.00 | |
| Forward Voltage | | V_F | $I_F = 15A, V_{GE} = 0$ | — | 2.0 | 2.7 | V |
| Reverse Recovery Time | | t_{rr} | $I_F = 15A, V_{GE} = -10V, di/dt = 50A/\mu s$ | — | 0.08 | 0.15 | μs |
| Thermal Resistance | | $R_{th (j - c)}$ | Transistor | — | — | 1.56 | °C/W |
| | | | Diode | — | — | 2.80 | |







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