

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16203

DT-33-35



# SEMICONDUCTOR

## TECHNICAL DATA

**TOSHIBA GTR MODULE**

MG15G4GL1      MG15G6EL1

**SILICON NPN TRIPLE DIFFUSED TYPE**

**HIGH POWER SWITCHING APPLICATIONS.**  
**MOTOR CONTROL APPLICATIONS.**

## FEATURES :

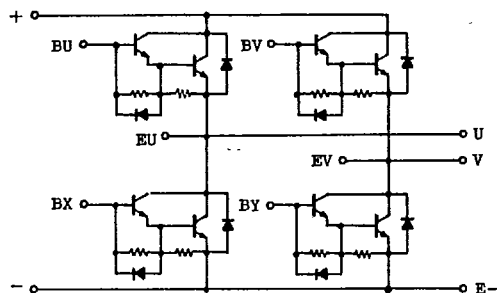
- .The Collector is Isolated from Case
- .4 or 6 Darlington Transistors including Free Wheeling Diodes are Built-in to 1 package
- .High DC Current Gain

:  $h_{FE}=100(\text{Min.})$  ( $I_C=15A$ )

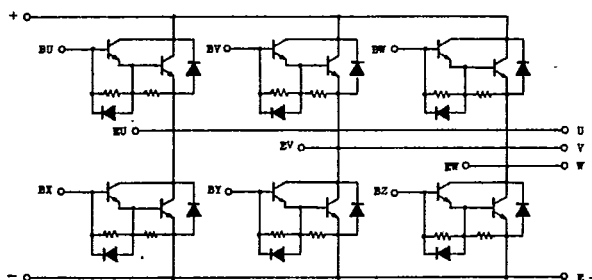
- ### .Low Saturation Voltage

$$\therefore V_{CE(sat)} = 2V(\text{Max.}) \quad (I_C = 15A)$$

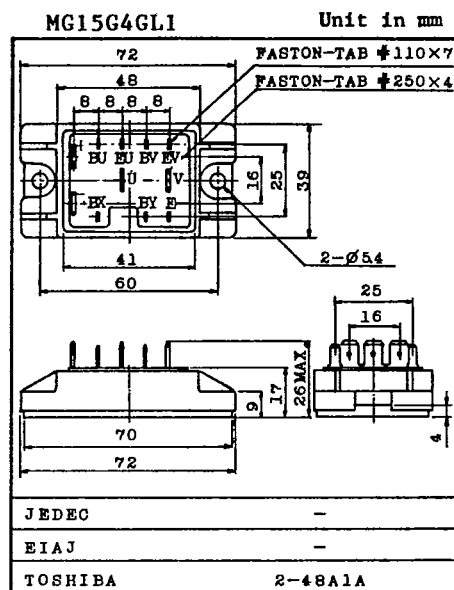
## EQUIVALENT CIRCUIT



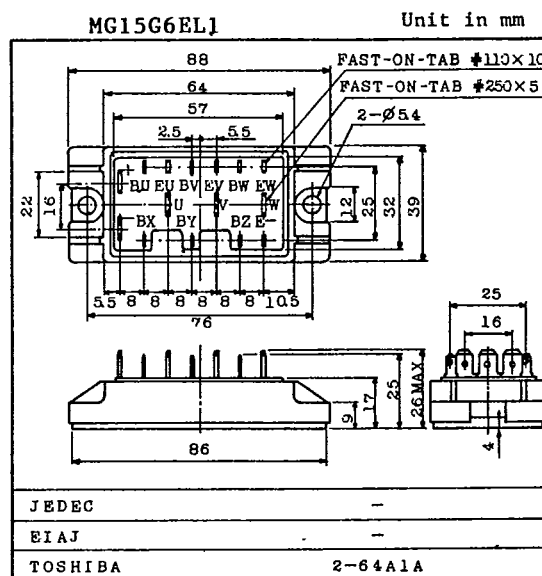
MG15G4GL1



MG15G6EL1



Weight : 140g



Weight : 180g

**TOSHIBA CORPORATION**

GT 1 A 2 A

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SEMICONDUCTOR

TECHNICAL DATA

M G 1 5 G 4 G L 1

M G 1 5 G 6 E 1 1

## MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC                        |     | SYMBOL                | RATING            | UNIT  |
|---------------------------------------|-----|-----------------------|-------------------|-------|
| Collector-Base Voltage                |     | V <sub>CB0</sub>      | 600               | V     |
| Collector-Emitter Voltage             |     | V <sub>CEO</sub>      | 600               | V     |
| Collector-Emitter Sustaining Voltage  |     | V <sub>CEO(SUS)</sub> | 450               | V     |
| Emitter-Base Voltage                  |     | V <sub>EB0</sub>      | 6                 | V     |
| Collector Current                     | DC  | I <sub>C</sub>        | 15                | A     |
|                                       | 1ms | I <sub>C</sub>        | 30                | A     |
|                                       | DC  | -I <sub>C</sub>       | 15                | A     |
| Base Current                          |     | I <sub>B</sub>        | 1                 | A     |
| Collector Power Dissipation (Tc=25°C) |     | P <sub>C</sub>        | 100               | W     |
| Junction Temperature                  |     | T <sub>j</sub>        | 150               | °C    |
| Storage Temperature Range             |     | T <sub>stg</sub>      | -40 ~ 125         | °C    |
| Isolation Voltage                     |     | V <sub>isol</sub>     | 2500(AC 1 Minute) | V     |
| Screw Torque                          |     |                       | 30                | kg·cm |

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                        |              | SYMBOL                | TEST CONDITION                                                   | MIN. | TYP. | MAX. | UNIT |
|---------------------------------------|--------------|-----------------------|------------------------------------------------------------------|------|------|------|------|
| Collector Cut-off Current             |              | I <sub>CBO</sub>      | V <sub>CB</sub> =600V, I <sub>E</sub> =0                         | -    | -    | 1.0  | mA   |
| Emitter Cut-off Current               |              | I <sub>EBO</sub>      | V <sub>EB</sub> =6V, I <sub>C</sub> =0                           | -    | -    | 100  | mA   |
| Collector-Emitter Sustaining Voltage  |              | V <sub>CEO(SUS)</sub> | I <sub>C</sub> =0.5A, L=40mH                                     | 450  | -    | -    | V    |
| DC Current Gain                       |              | h <sub>FE</sub>       | V <sub>CE</sub> =5V, I <sub>C</sub> =15A                         | 100  | -    | -    |      |
| Collector-Emitter Saturation Voltage  |              | V <sub>CE(sat)</sub>  | I <sub>C</sub> =15A, I <sub>B</sub> =0.4A                        | -    | -    | 2.0  | V    |
| Base-Emitter Saturation Voltage       |              | V <sub>BE(sat)</sub>  |                                                                  | -    | -    | 2.5  | V    |
| Emitter-Collector Voltage             |              | V <sub>ECO</sub>      | I <sub>E</sub> =15A, I <sub>B</sub> =0                           | -    | -    | 1.6  | V    |
| Reverse Recovery Time                 |              | t <sub>rr</sub>       | -I <sub>C</sub> =15A, V <sub>EB</sub> =2V, V <sub>CE</sub> =300V | -    | -    | 0.7  | μs   |
| Collector Output Capacitance          |              | C <sub>ob</sub>       | V <sub>CB</sub> =50V, I <sub>E</sub> =0, f=1MHz                  | -    | 400  | -    | pF   |
| Switching Time                        | Turn-on Time | t <sub>on</sub>       |                                                                  | -    | -    | 1.0  | μs   |
|                                       | Storage Time | t <sub>stg</sub>      |                                                                  | -    | -    | 12   |      |
|                                       | Fall Time    | t <sub>f</sub>        |                                                                  | -    | -    | 2.0  |      |
| Thermal Resistance (Junction to Case) |              | R <sub>th(j-c)</sub>  |                                                                  | -    | -    | 1.25 | °C/W |

TOSHIBA CORPORATION

GT1A2

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16205 DT-33-35



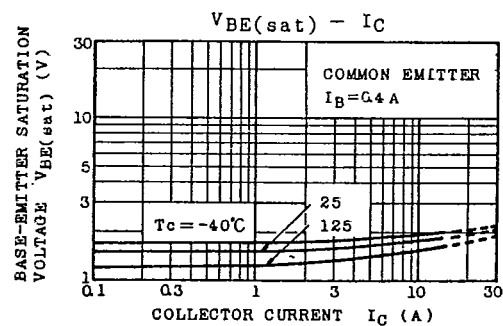
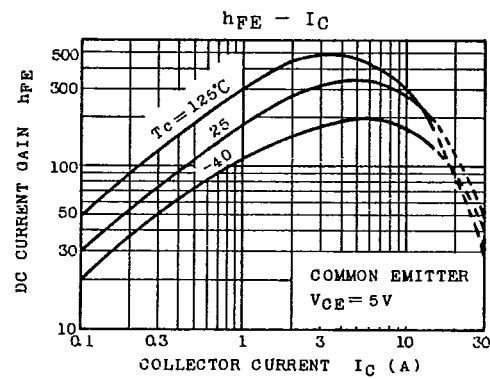
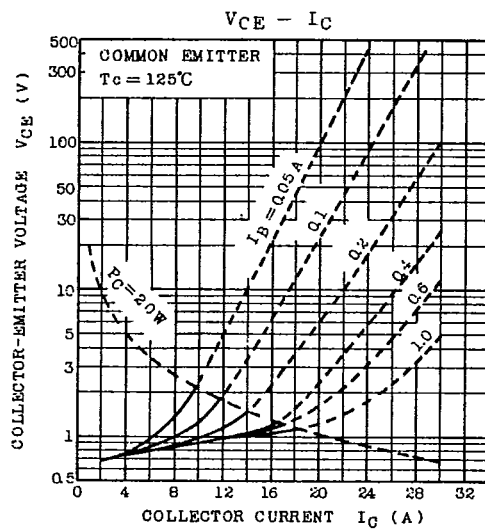
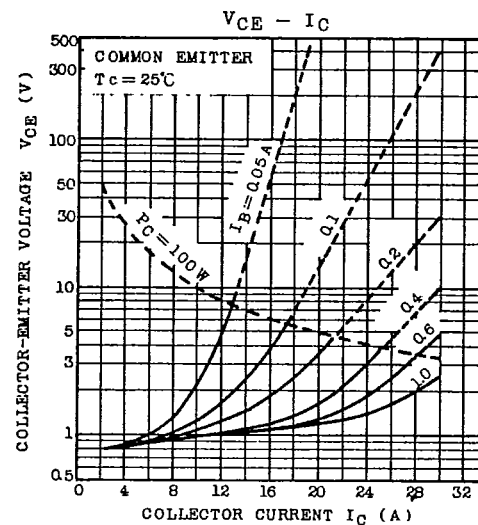
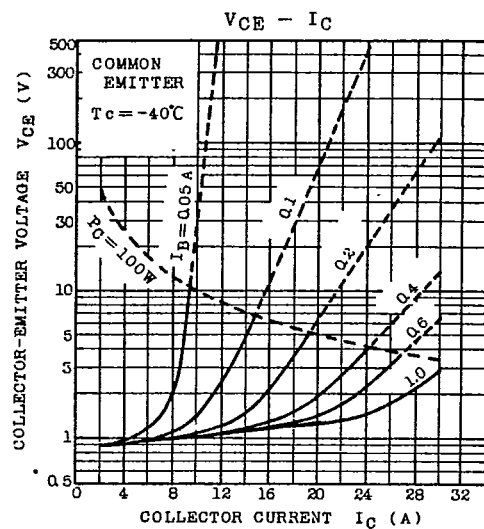
SEMICONDUCTOR

東芝

TECHNICAL DATA

MG15G4GL1

MG15G6BL1



TOSHIBA CORPORATION

GT1A2



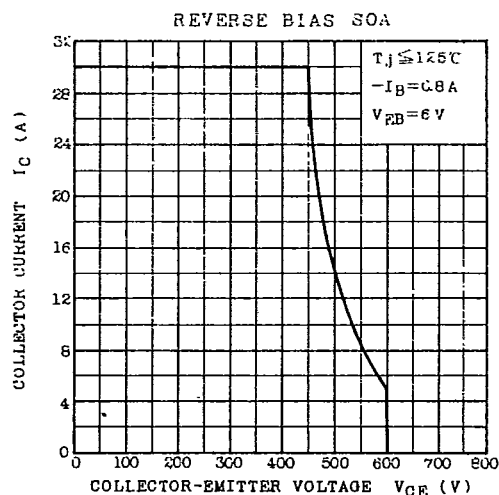
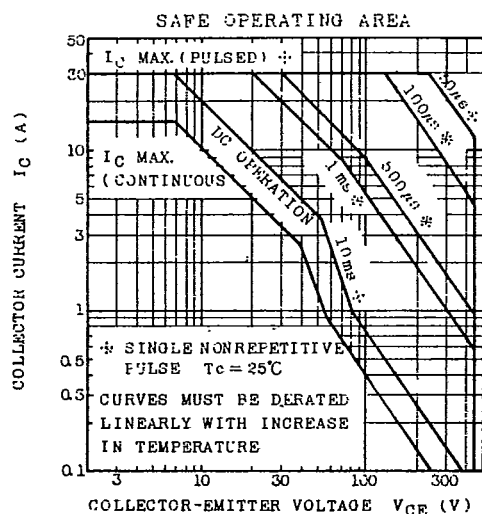
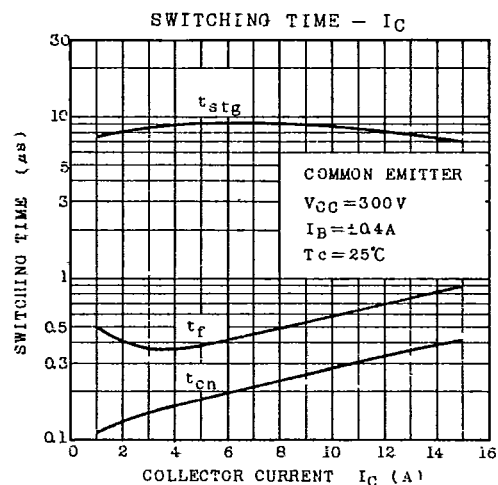
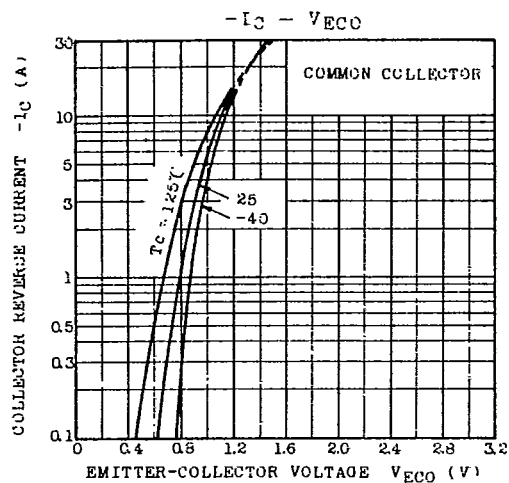
SEMICONDUCTOR

東芝

TECHNICAL DATA

MG15G4GL1

MG15G6EL1



TOSHIBA CORPORATION

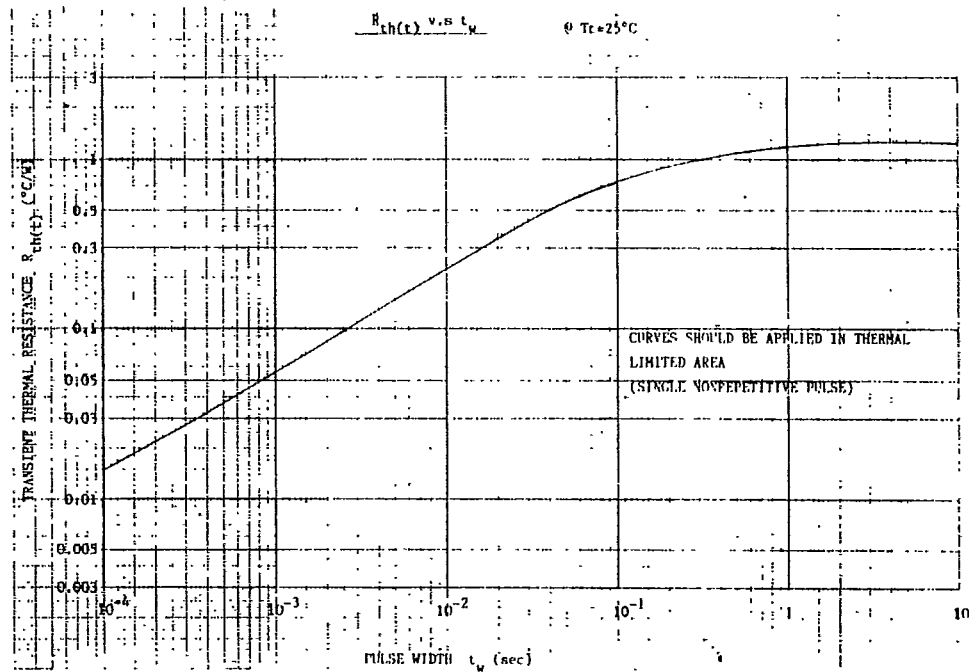
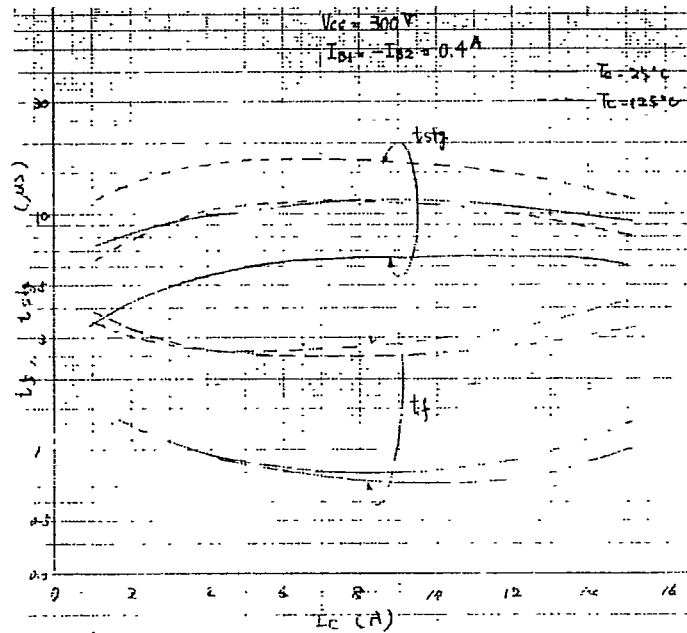
GT1A2



# SEMICONDUCTOR

## TECHNICAL DATA

MG1EG4GLI  
MG1EG6ELI



TOSHIBA CORPORATION

GT1A2A

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16208

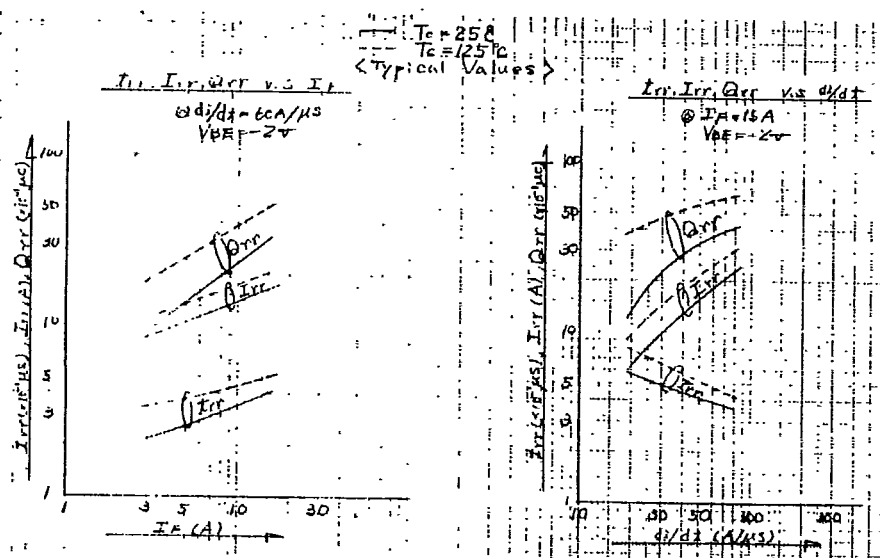
DT-33-35



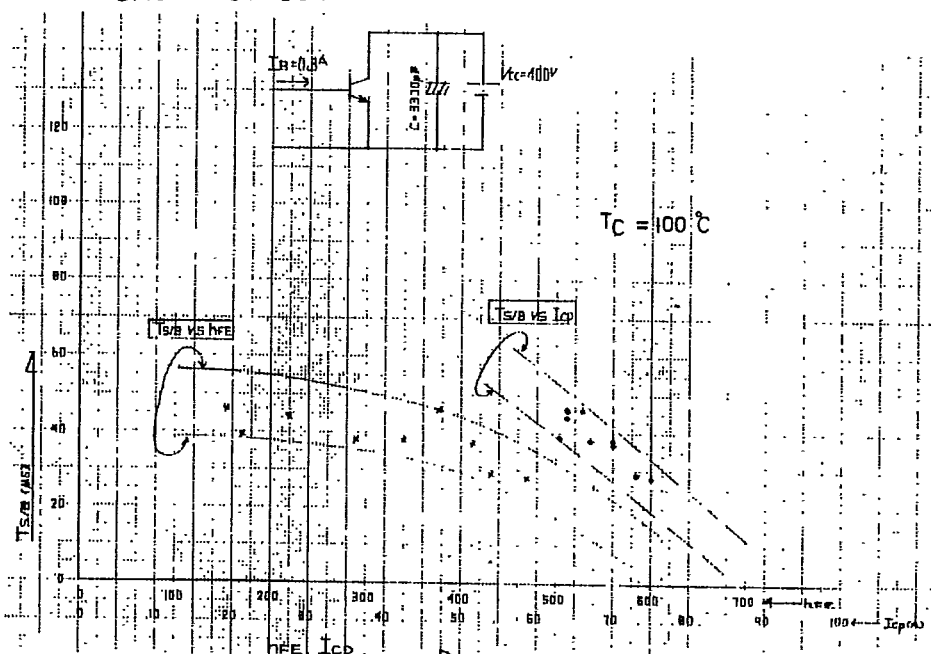
# SEMICONDUCTOR

## TECHNICAL DATA

MG15G4GLI  
MG15G6ELI



### SHORT CIRCUIT



TOSHIBA CORPORATION

GT1A2A

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Datasheets for electronic components.