

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL MOS TYPE

# GT40T101

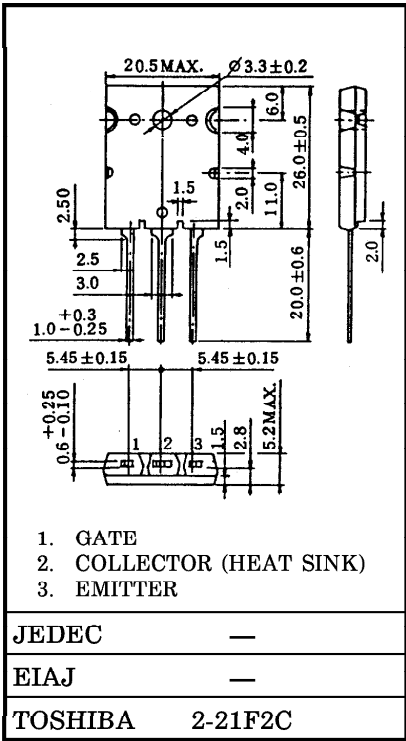
HIGH POWER SWITCHING APPLICATIONS.

Unit in mm

- Enhancement-Mode
- High Speed :  $t_f = 0.4 \mu s$  (Max.) ( $I_C = 40A$ )
- Low Saturation :  $V_{CE(sat)} = 5.0V$  (Max.) ( $I_C = 40A$ )

MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC              |                        | SYMBOL    | RATING         | UNIT       |
|-----------------------------|------------------------|-----------|----------------|------------|
| Collector-Emitter Voltage   |                        | $V_{CES}$ | 1500           | V          |
| Gate-Emitter Voltage        |                        | $V_{GES}$ | $\pm 25$       | V          |
| Collector Current           | DC                     | $I_C$     | 40             | A          |
| Collector Current           | 1ms                    | $I_{CP}$  | 80             | A          |
| Collector Power Dissipation | ( $T_c = 25^\circ C$ ) | $P_C$     | 200            | W          |
| Junction Temperature        |                        | $T_j$     | 150            | $^\circ C$ |
| Storage Temperature Range   |                        | $T_{stg}$ | $-55 \sim 150$ | $^\circ C$ |



Weight : 9.75g

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                       |               | SYMBOL        | TEST CONDITION                       | MIN. | TYP. | MAX.      | UNIT           |
|--------------------------------------|---------------|---------------|--------------------------------------|------|------|-----------|----------------|
| Gate Leakage Current                 |               | $I_{GES}$     | $V_{GE} = \pm 25V, V_{CE} = 0$       | —    | —    | $\pm 500$ | nA             |
| Collector Cut-off Current            |               | $I_{CES}$     | $V_{CE} = 1500V, V_{GE} = 0$         | —    | —    | 1.0       | mA             |
| Gate-Emitter Cut-off Voltage         |               | $V_{GE(OFF)}$ | $I_C = 40mA, V_{CE} = 5V$            | 3.0  | —    | 6.0       | V              |
| Collector-Emitter Saturation Voltage |               | $V_{CE(sat)}$ | $I_C = 40A, V_{GE} = 15V$            | —    | 4.0  | 5.0       | V              |
| Input Capacitance                    |               | $C_{ies}$     | $V_{CE} = 10V, V_{GE} = 0, f = 1MHz$ | —    | 3600 | —         | pF             |
| Switching Time                       | Rise Time     | $t_r$         |                                      | —    | 0.6  | 1.0       | $\mu s$        |
|                                      | Turn-on Time  | $t_{on}$      |                                      | —    | 0.7  | 1.1       |                |
|                                      | Fall Time     | $t_f$         |                                      | —    | 0.2  | 0.4       |                |
|                                      | Turn-off Time | $t_{off}$     |                                      | —    | 0.5  | 1.0       |                |
| Thermal Resistance                   |               | $R_{th(j-c)}$ | —                                    | —    | —    | 0.625     | $^\circ C / W$ |

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