

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

**2SC3148**

SWITCHING REGULATOR AND HIGH VOLTAGE.

SWITCHING APPLICATIONS.

HIGH SPEED DC-DC CONVERTER APPLICATIONS.

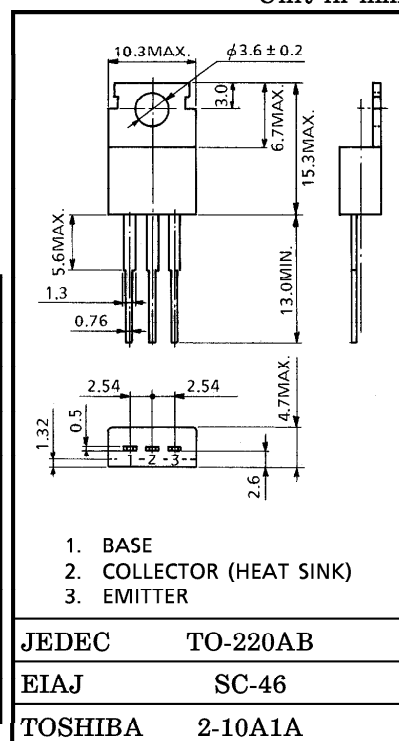
INDUSTRIAL APPLICATIONS

Unit in mm

- Excellent Switching Times ( $I_C=0.8A$ )  
 $t_r=1.0\mu s$  Max.,  $t_f=1.0\mu s$  Max.
- High Collector-Emitter Breakdown Voltage :  $V_{CEO}=800V$

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

| CHARACTERISTIC              |                  | SYMBOL    | RATING        | UNIT       |
|-----------------------------|------------------|-----------|---------------|------------|
| Collector-Base Voltage      |                  | $V_{CBO}$ | 900           | V          |
| Collector-Emitter Voltage   |                  | $V_{CEO}$ | 800           | V          |
| Emitter-Base Voltage        |                  | $V_{EBO}$ | 7             | V          |
| Collector Current           | DC               | $I_C$     | 3             | A          |
|                             | Pulse            | $I_{CP}$  | 5             |            |
| Base Current                |                  | $I_B$     | 1             | A          |
| Collector Power Dissipation | $T_a=25^\circ C$ | $P_C$     | 1.5           | W          |
|                             | $T_c=25^\circ C$ |           | 40            |            |
| Junction Temperature        |                  | $T_j$     | 150           | $^\circ C$ |
| Storage Temperature Range   |                  | $T_{stg}$ | $-55\sim 150$ | $^\circ C$ |



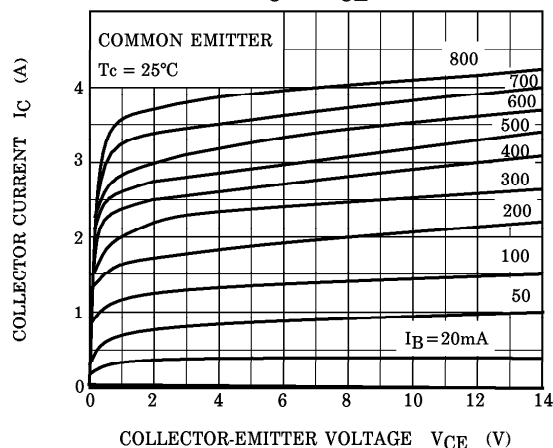
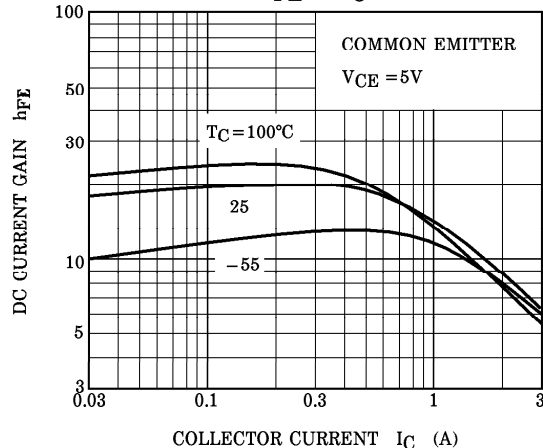
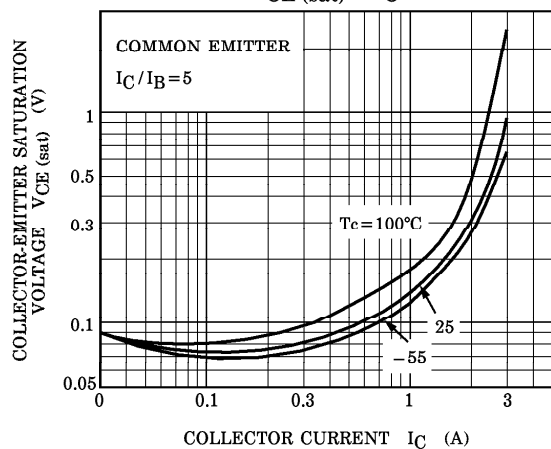
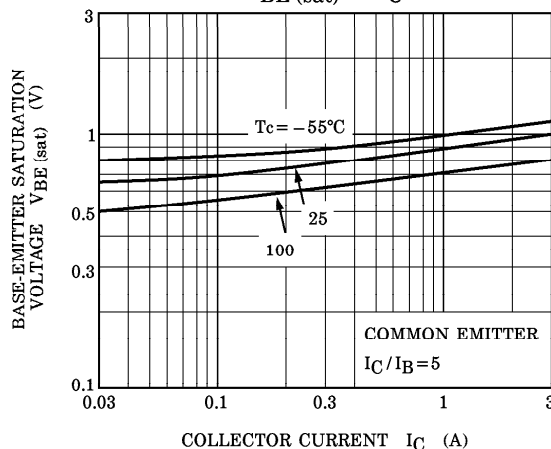
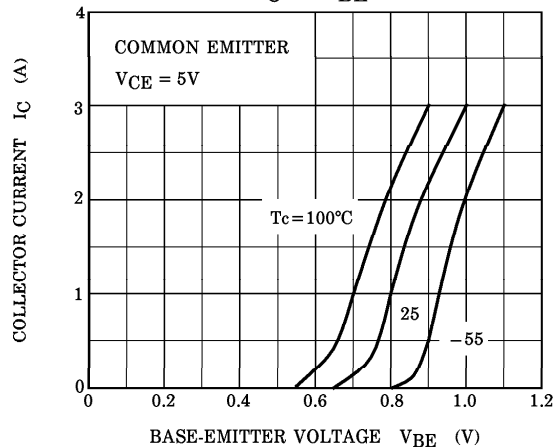
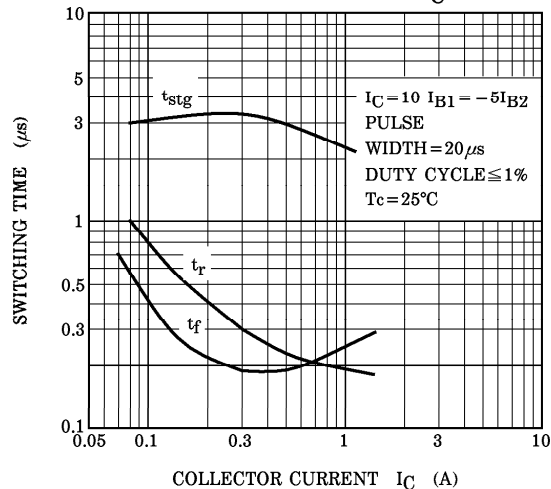
Weight : 1.9g

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

| CHARACTERISTIC                       |              | SYMBOL        | TEST CONDITION        | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|--------------|---------------|-----------------------|------|------|------|---------|
| Collector Cut-off Current            |              | $I_{CBO}$     | $V_{CB}=800V, I_E=0$  | —    | —    | 100  | $\mu A$ |
| Emitter Cut-off Current              |              | $I_{EBO}$     | $V_{EB}=7V, I_C=0$    | —    | —    | 1    | mA      |
| Collector-Base Breakdown Voltage     |              | $V_{(BR)CBO}$ | $I_C=1mA, I_E=0$      | 900  | —    | —    | V       |
| Collector-Emitter Breakdown Voltage  |              | $V_{(BR)CEO}$ | $I_C=10mA, I_B=0$     | 800  | —    | —    | V       |
| DC Current Gain                      |              | $h_{FE}$      | $V_{CE}=5V, I_C=0.8A$ | 10   | —    | —    |         |
| Collector-Emitter Saturation Voltage |              | $V_{CE(sat)}$ | $I_C=0.8A, I_B=0.16A$ | —    | —    | 0.6  | V       |
| Base-Emitter Saturation Voltage      |              | $V_{BE(sat)}$ | $I_C=0.8V, I_B=0.16A$ | —    | —    | 1.2  | V       |
| Switching Time                       | Rise Time    | $t_r$         |                       | —    | —    | 1.0  | $\mu s$ |
|                                      | Storage Time | $t_{stg}$     |                       | —    | —    | 4.0  |         |
|                                      | Fall Time    | $t_f$         |                       | —    | —    | 1.0  |         |

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$I_C - V_{CE}$  $h_{FE} - I_C$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $I_C - V_{BE}$ SWITCHING TIME -  $I_C$ 

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