

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

# 2SC3148

SWITCHING REGULATOR AND HIGH VOLTAGE.  
 SWITCHING APPLICATIONS.  
 HIGH SPEED DC-DC CONVERTER APPLICATIONS.

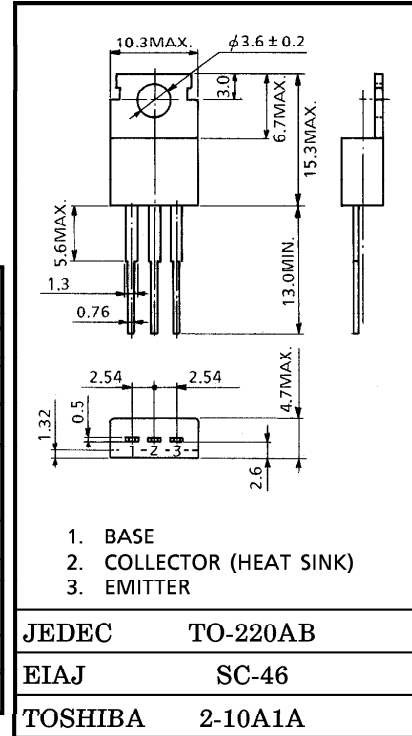
INDUSTRIAL APPLICATIONS

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   |                  | $T_{stg}$ | -55~150 | $^\circ C$ |



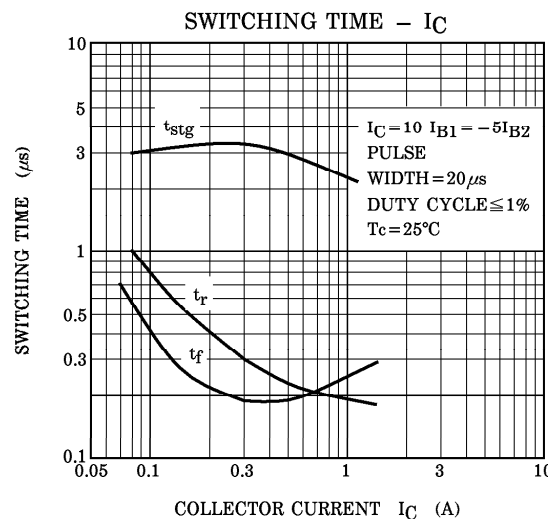
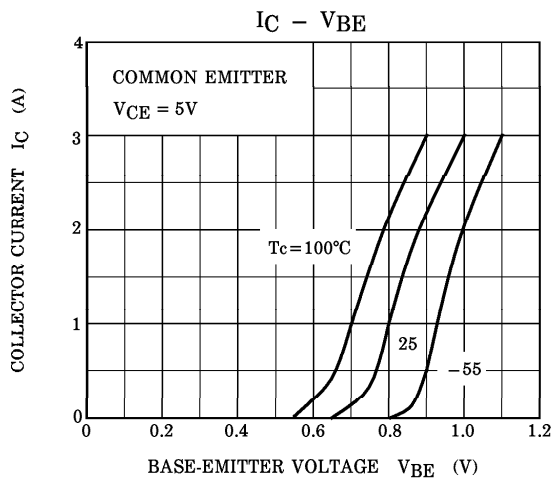
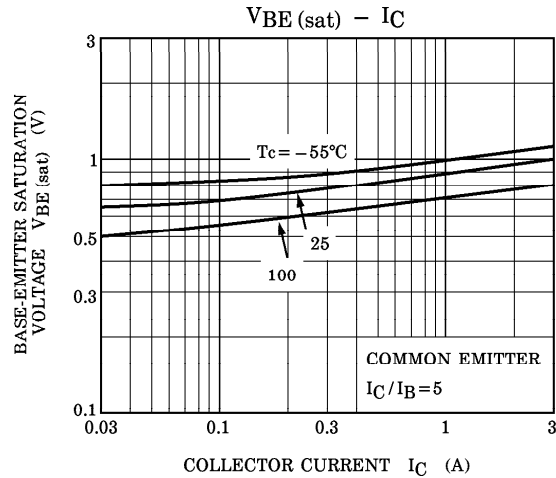
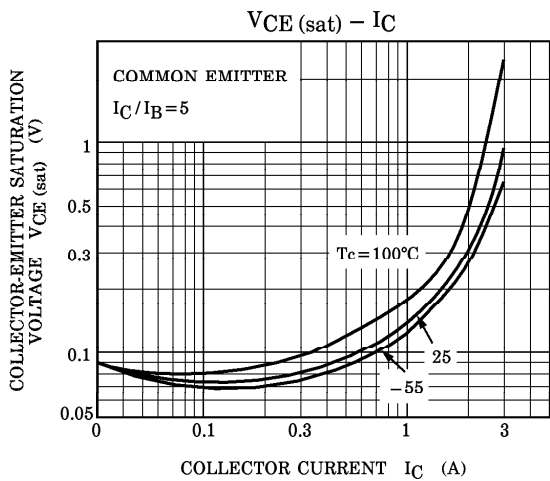
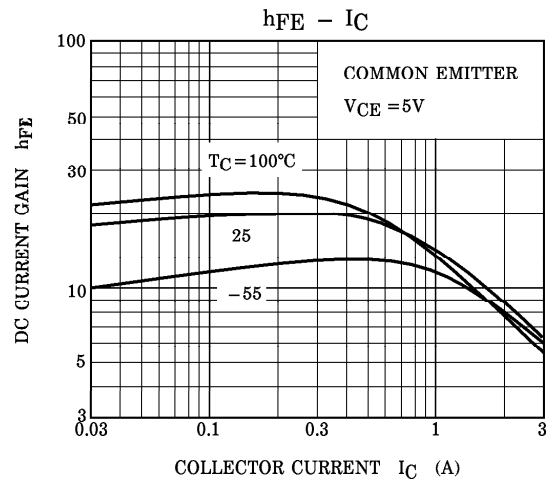
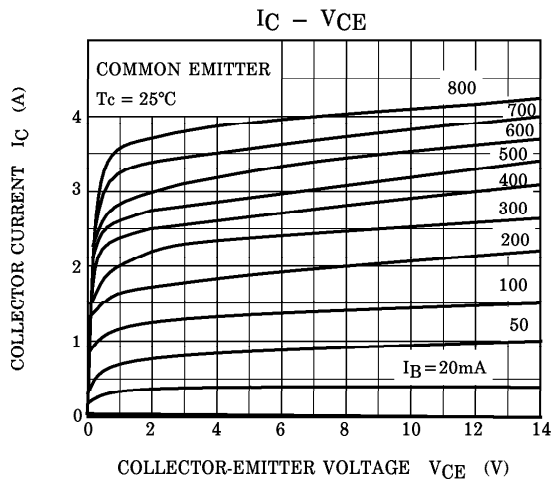
ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

Weight : 1.9g

| 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    | $t_f$         |                       | $I_{B1}=0.08A$<br>$I_{B1}=-0.20A$<br>DUTY CYCLE $\leq 1\%$ | —    | —    |         |

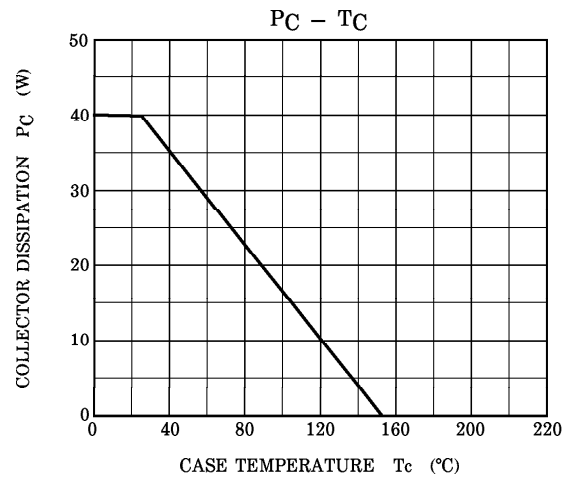
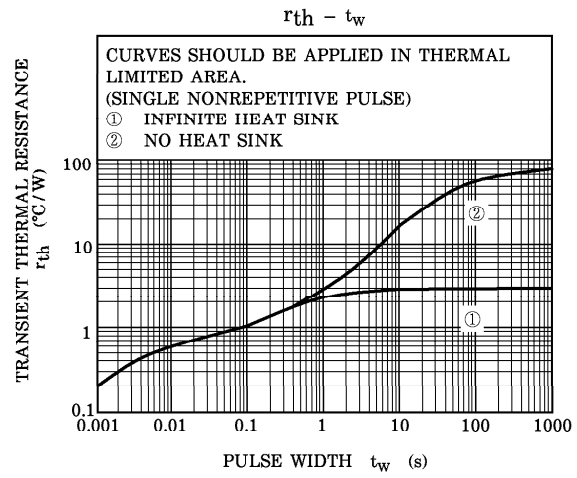
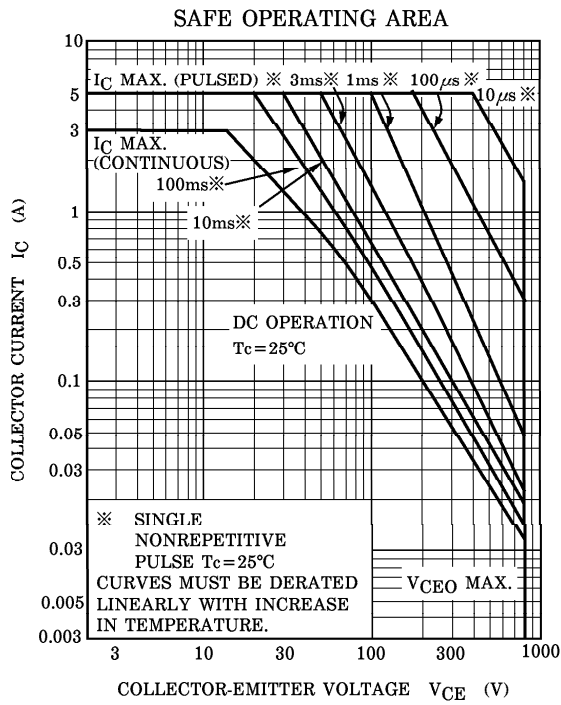
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