

|              |  |                |
|--------------|--|----------------|
| <b>SANYO</b> | No.1069C   | <b>2SC3150</b> |
|              | NPN Triple Diffused Planar Silicon Transistor<br>FOR SWITCHING REGULATOR |                |

**Features**

- . High breakdown voltage ( $V_{CBO} \geq 900V$ )
- . High speed switching.
- . Wide ASO.

**Absolute Maximum Ratings at  $T_a=25^\circ C$**

|                              |           |   | unit       |
|------------------------------|-----------|---|------------|
| Collector-to-Base Voltage    | $V_{CBO}$ | 900   | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ | 800   | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ | 7   | V          |
| Collector Current            | $I_C$     | 3   | A          |
| Peak Collector Current       | $i_{cp}$  | $PW \leq 300\mu s,$<br>Duty Cycle $\leq 10\%$ | 10 A       |
| Base Current                 | $I_B$     | 1.5   | A          |
| Collector Dissipation        | $P_C$     | $T_C=25^\circ C$                              | 50 W       |
| Junction Temperature         | $T_j$     | 150   | $^\circ C$ |
| Storage Temperature          | $T_{stg}$ | -55 to +150                                   | $^\circ C$ |

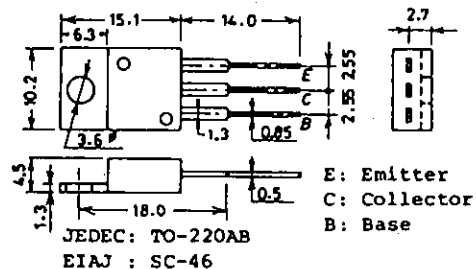
**Electrical Characteristics at  $T_a=25^\circ C$**

|                          |                   |   | min | typ | max | unit    |
|--------------------------|-------------------|---|-----|-----|-----|---------|
| Collector Cutoff Current | $I_{CBO}$         | $V_{CB}=800V, I_E=0$  |     |     | 10  | $\mu A$ |
| Emitter Cutoff Current   | $I_{EBO}$         | $V_{EB}=5V, I_C=0$  |     |     | 10  | $\mu A$ |
| DC Current Gain          | $h_{FE}(1)$       | $V_{CE}=5V, I_C=0.2A$   | 10* |     | 40* |         |
|                          | $h_{FE}(2)$       | $V_{CE}=5V, I_C=1A$   | 8   |     |     |         |
| Gain-Bandwidth Product   | $f_T$             | $V_{CE}=10V, I_C=0.2A$  |     | 15  |     | MHz     |
| Output Capacitance       | $c_{ob}$          | $V_{CB}=10V, f=1MHz$  |     | 60  |     | pF      |
| C-E Saturation Voltage   | $V_{CE(sat)}$     | $I_C=1.5A, I_B=0.3A$  |     |     | 2.0 | V       |
| B-E Saturation Voltage   | $V_{BE(sat)}$     | $I_C=1.5A, I_B=0.3A$  |     |     | 1.5 | V       |
| C-B Breakdown Voltage    | $V(BR)_{CBO}$     | $I_C=1mA, I_E=0$  | 900 |     |     | V       |
| C-E Breakdown Voltage    | $V(BR)_{CEO}$     | $I_C=5mA, R_{BE}=\infty$  | 800 |     |     | V       |
| E-B Breakdown Voltage    | $V(BR)_{EBO}$     | $I_E=1mA, I_C=0$  | 7   |     |     | V       |
| C-E Sustain Voltage      | $V_{CEO(sus)}$    | $I_C=3A, L=500\mu H, I_B=1A$  | 800 |     |     | V       |
|                          | $V_{CEX(sus)}(1)$ | $I_C=1A, I_{B1}=0.2A, I_{B2}=-0.2A, L=2mH, clamped$   | 800 |     |     | V       |
|                          | $V_{CEX(sus)}(2)$ | $I_C=0.5A, I_{B1}=0.1A, I_{B2}=-0.1A, L=5mH, clamped$   | 900 |     |     | V       |
| Turn-ON Time             | $t_{on}$          | $\left[ \begin{matrix} I_C=2A, I_{B1}=0.4A, I_{B2}=-0.8A, \\ R_L=200ohms, V_{CC}=400V \end{matrix} \right]$ |     |     | 1.0 | $\mu s$ |
| Storage Time             | $t_{stg}$         |   |     |     | 3.0 | $\mu s$ |
| Fall Time                | $t_f$             |   |     |     | 0.7 | $\mu s$ |

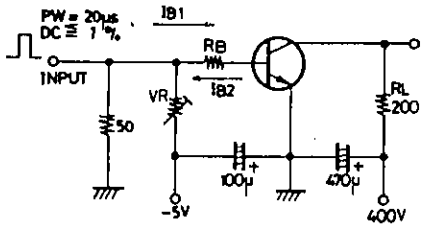
\*: The  $h_{FE}(1)$  of the 2SC3150 is classified as follows. When specifying the  $h_{FE}(1)$  rank, specify two ranks or more in principle.

|    |   |    |    |   |    |    |   |    |
|----|---|----|----|---|----|----|---|----|
| 10 | K | 20 | 15 | L | 30 | 20 | M | 40 |
|----|---|----|----|---|----|----|---|----|

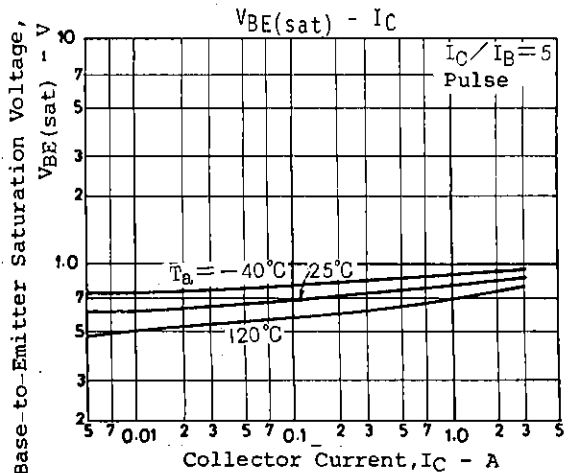
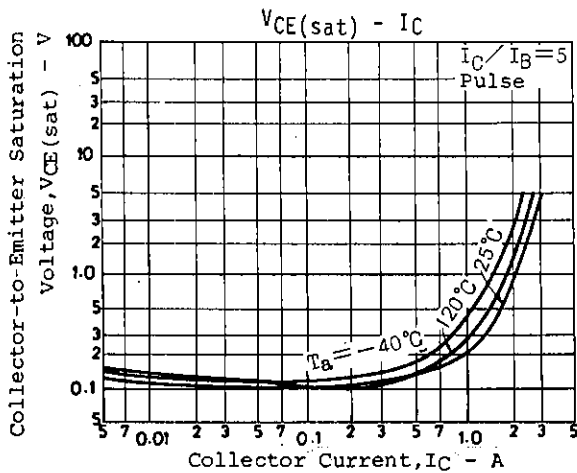
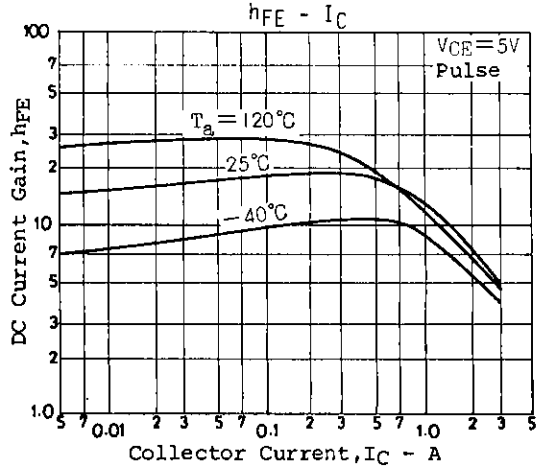
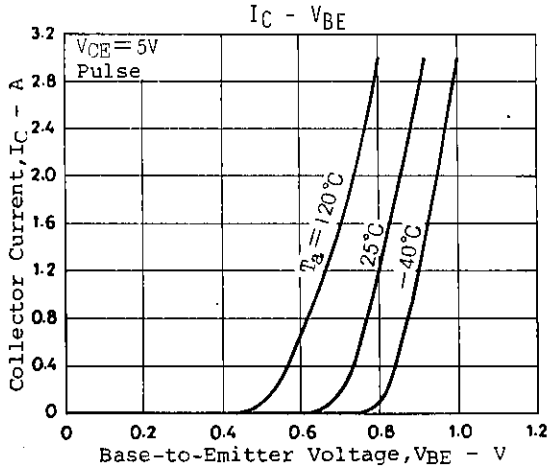
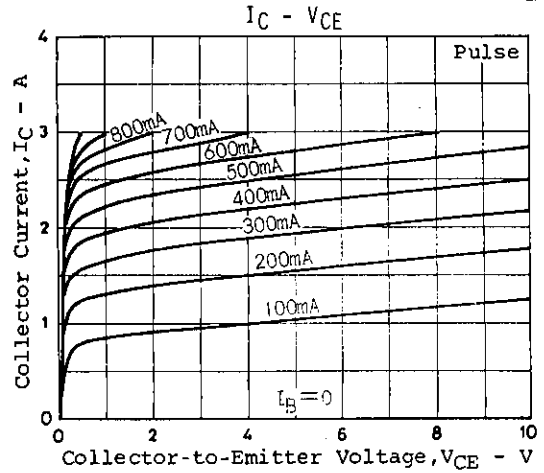
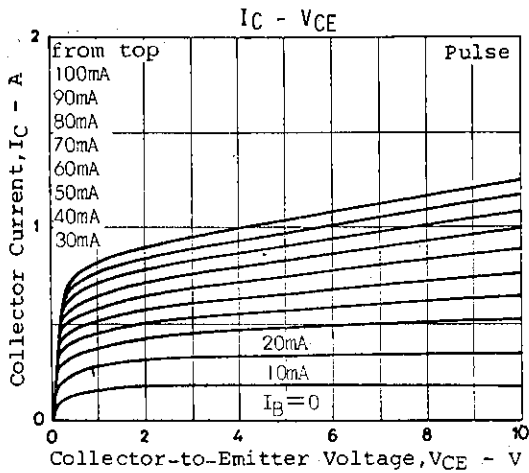
**Package Dimensions 2010A (unit:mm)**

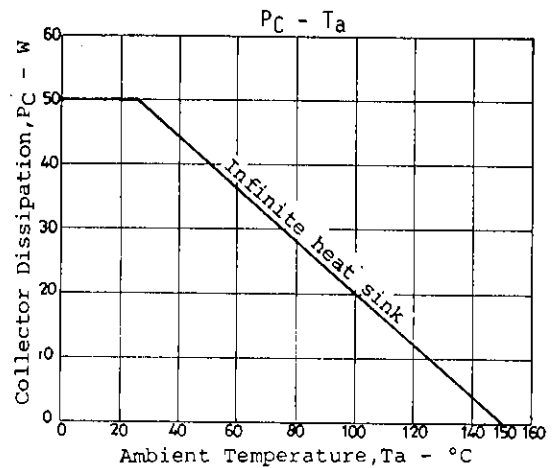
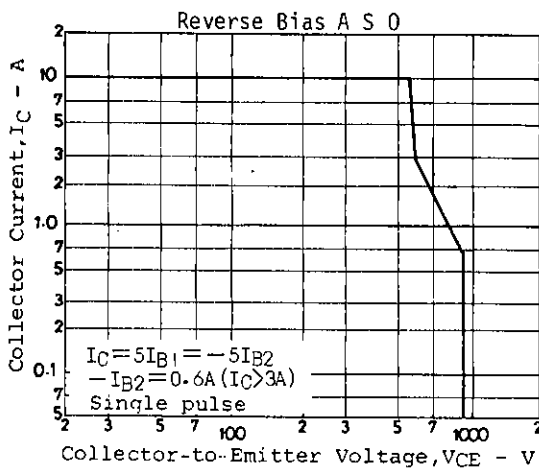
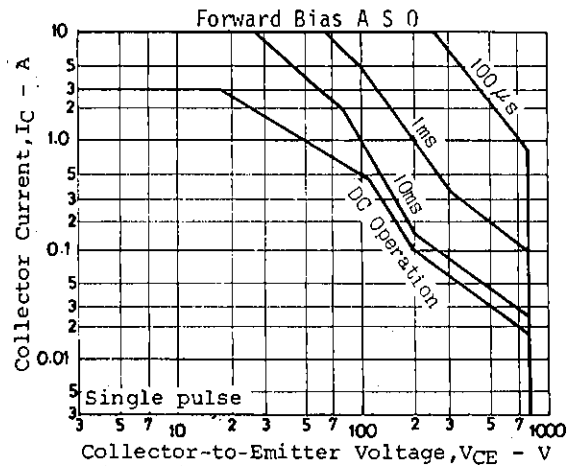
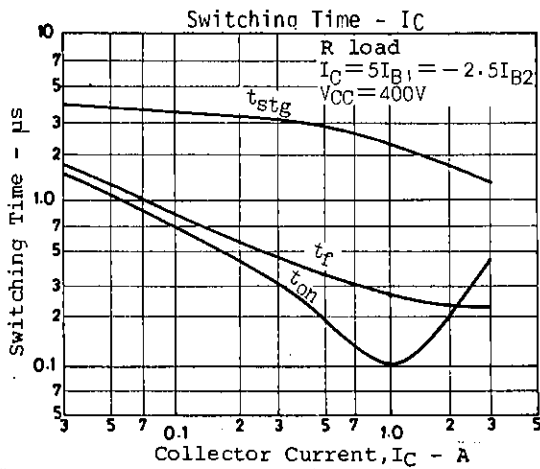


Switching Time Test Circuit



Unit (Resistance : Ω, Capacitance : F)





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