Ordering number: EN 1594B

SANYO

No.1594B

# 2SC3460

NPN Triple Diffused Planar Silicon Transistor

## 800V/6A Switching Regulator Applications

**Features**

- High breakdown voltage and high reliability.
- Fast switching speed ($t_f$: 0.1μs typ.)
- Wide ASO.
- Adoption of MBIT process.

**Absolute Maximum Ratings** at Ta=25°C

| | | | | unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | 1100 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | 800 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | 7 | V |
| Collector Current | $I_C$ | | 6 | A |
| Collector Current (Pulse) | $I_{CP}$ | PW≦300μs, Duty Cycle≦10% | 20 | A |
| Base Current | $I_B$ | | 3 | A |
| Collector Dissipation | $P_C$ | $T_C$=25°C | 100 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

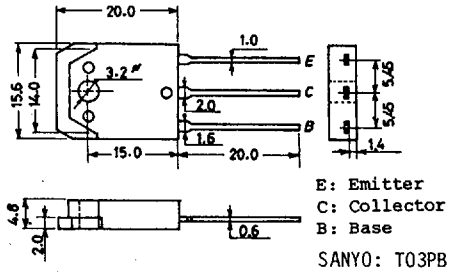
**Electrical Characteristics** at Ta=25°C

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=800V, $I_E$=0 | | | 10 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | | | 10 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=5V, $I_C$=0.4A | 10* | | 40* | |
| | $h_{FE(2)}$ | $V_{CE}$=5V, $I_C$=2A | 8 | | | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=10V, $I_C$=0.4A | | 15 | | MHz |
| Output Capacitance | Cob | $V_{CB}$=10V, f=1MHz | | 120 | | pF |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C$=3A, $I_B$=0.6A | | | 2.0 | V |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C$=3A, $I_B$=0.6A | | | 1.5 | V |
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=1mA, $I_E$=0 | 1100 | | | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=5mA, $R_{BE}$=∞ | 800 | | | V |
| E-B Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=1mA, $I_C$=0 | 7 | | | V |
| C-E Sustain Voltage | $V_{CEX(sus)}$ | $I_C$=3A, $I_{B1}$=-$I_{B2}$=0.6A, L=1mH, clamped | 800 | | | V |
| Turn-On Time | $t_{on}$ | $V_{CC}$=400V, $5I_{B2}$=-2.5$I_{B2}$=$I_C$=4A, $R_L$=100Ω | | | 0.5 | μs |
| Storage Time | $t_{stg}$ | | | | 3.0 | μs |
| Fall Time | $t_f$ | | | | 0.3 | μs |

*: The $h_{FE(1)}$ of the 2SC3460 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 |

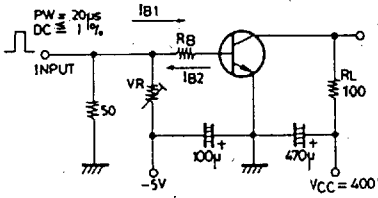
**Package Dimensions** 2022
(unit:mm)




E: Emitter
C: Collector
B: Base
SANYO: TO3PB

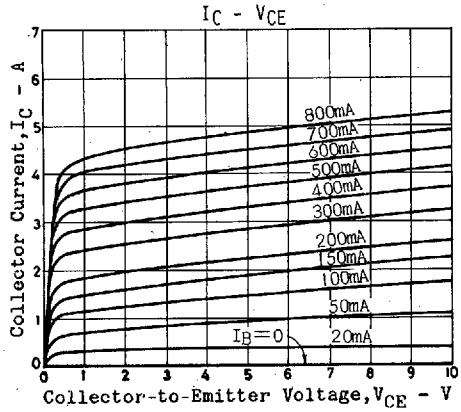

SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10,1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

**Switching Time Test Circuit**

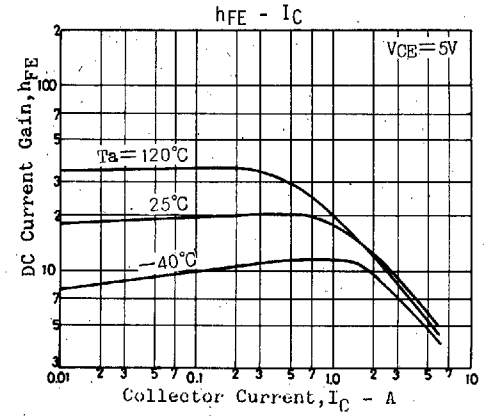



Unit (Resistance : Ω, Capacitance : F)

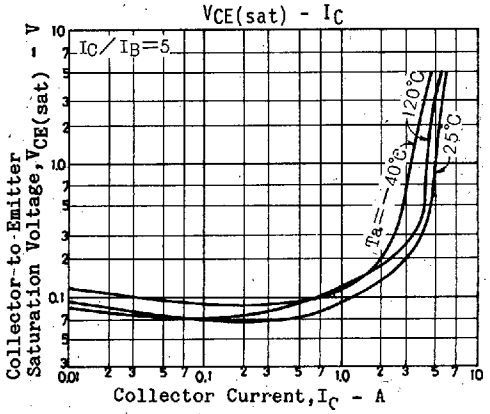
$I_C$ - $V_{CE}$



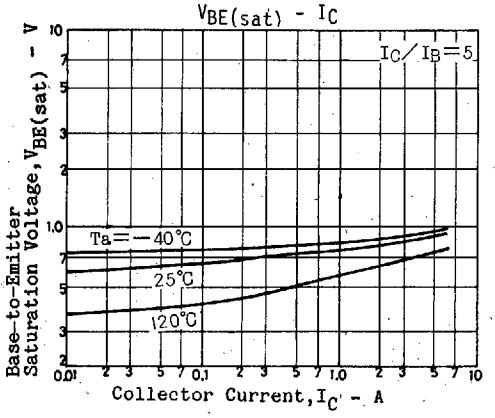

$h_{FE}$ - $I_C$



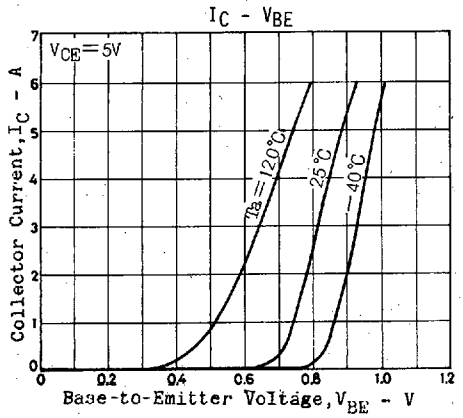

$V_{CE(sat)}$ - $I_C$



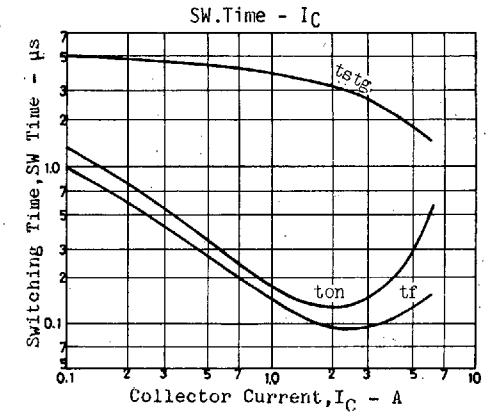

$V_{BE(sat)}$ - $I_C$



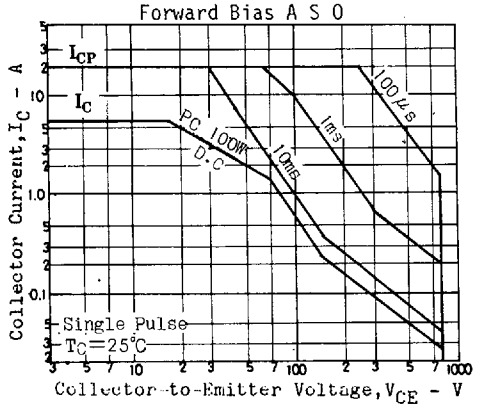

$I_C$ - $V_{BE}$



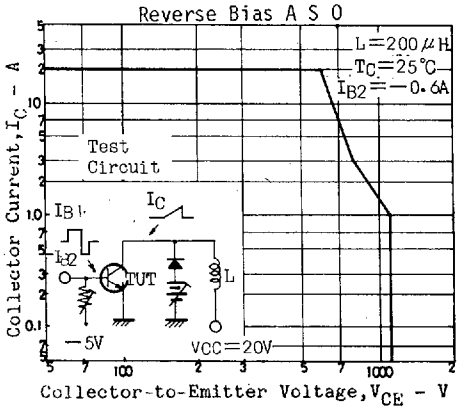

SW.Time - $I_C$



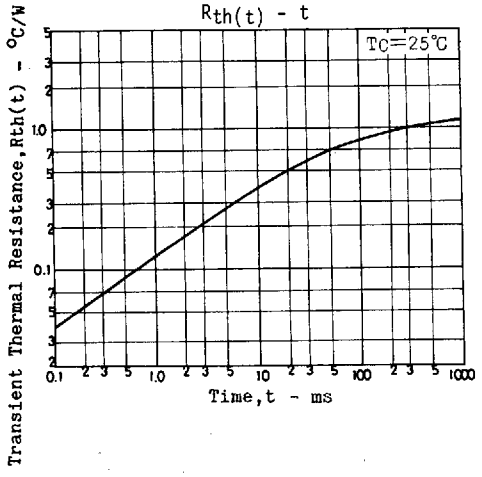
Forward Bias A S O




Reverse Bias A S O




$R_{th(t)}$ - t




$P_C$ - Tc