

**SANYO**

No.1970A

**2SC3751**

NPN Triple Diffused Planar Type Silicon Transistor

SWITCHING REGULATOR APPLICATIONS

**Features**

- . High breakdown voltage and high reliability
- . Fast switching speed
- . Wide ASO
- . Adoption of MBIT process
- . Micaless package facilitating mounting

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

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	1100	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>	800	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	7	V
Collector Current	I <sub>C</sub>	1.5	A
Peak Collector Current	i <sub>cp</sub>	PW ≤ 300µs, Duty cycle ≤ 10%	
Base Current	I <sub>B</sub>	0.8	A
Collector Dissipation	P <sub>C</sub>	25	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

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

			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =800V, I <sub>E</sub> =0			10	µA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	µA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A	10*		40*	
		V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A	8			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1A		15		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		35		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.75A, I <sub>B</sub> =0.15A			2.0	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =0.75A, I <sub>B</sub> =0.15A			1.5	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	1100			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =5mA, R <sub>BE</sub> =∞	800			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V

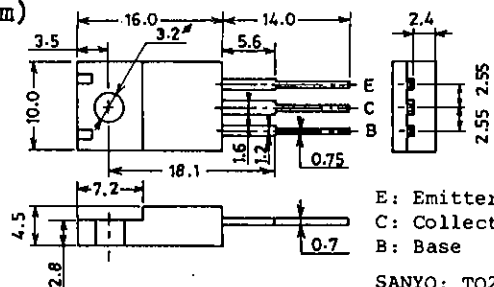
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\*: The h<sub>FE</sub>(1) of the 2SC3751 is classified as follows. When specifying the h<sub>FE</sub>(1) rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
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**Package Dimensions 2041**

(unit:mm)



E: Emitter  
C: Collector  
B: Base

SANYO: TO220ML

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Collector-to-Emitter Sustain Voltage

$V_{CEX(sus)}$   $I_C=0.75A,$   
 $I_{B1}=-I_{B2}=0.15A,$   
 $L=5mH, \text{clamped}$

min typ max unit  
 800 V

Turn-on Time

Storage Time

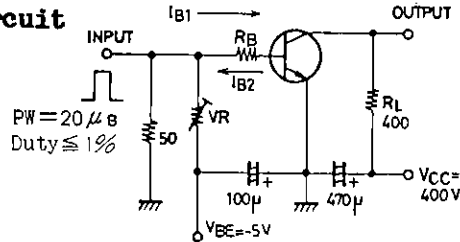
Fall Time

$t_{on}$   
 $t_{stg}$   
 $t_f$

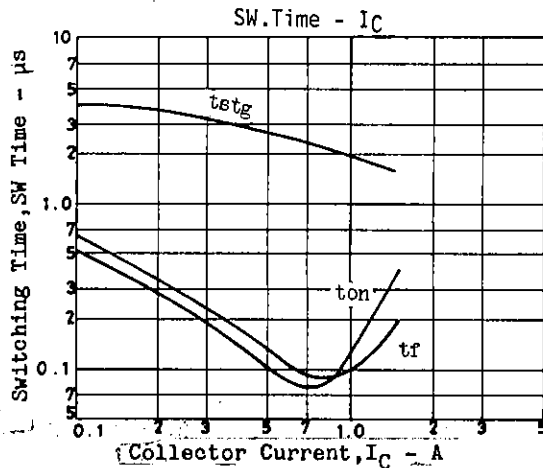
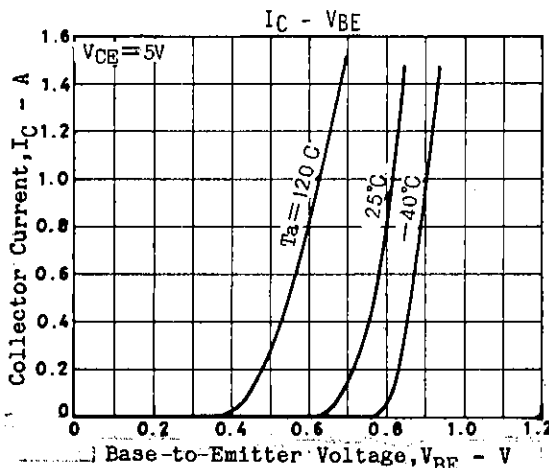
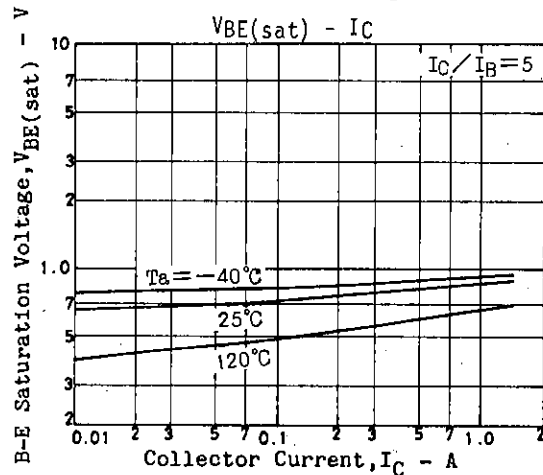
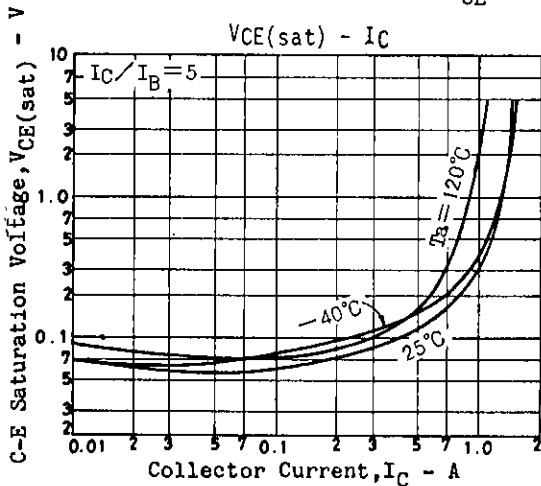
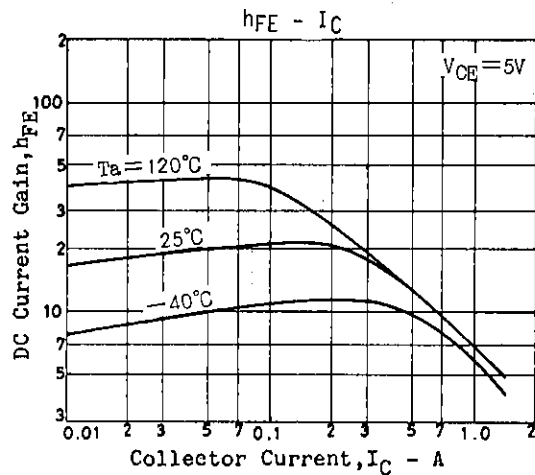
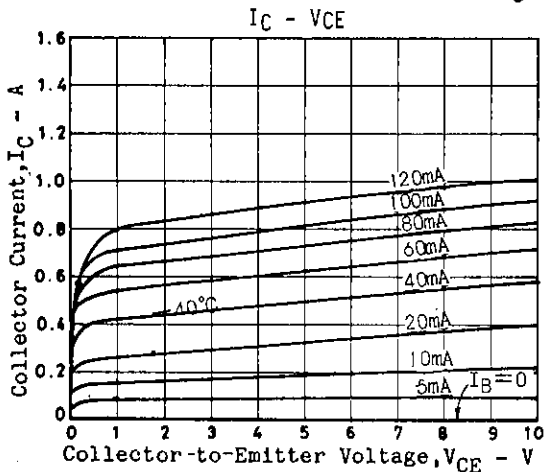
$V_{CC}=400V,$   
 $5I_{B1}=-2.5I_{B2}=I_C=1A,$   
 $R_L=400ohms$

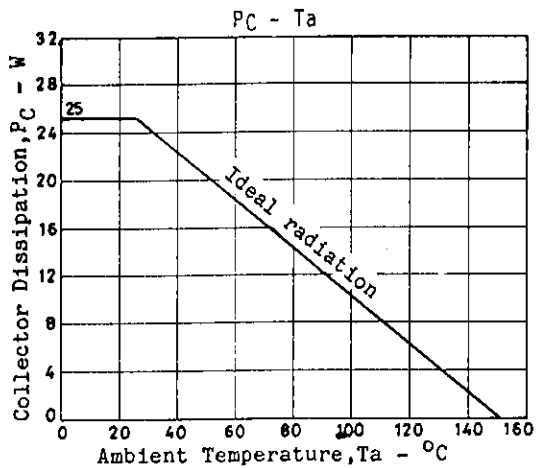
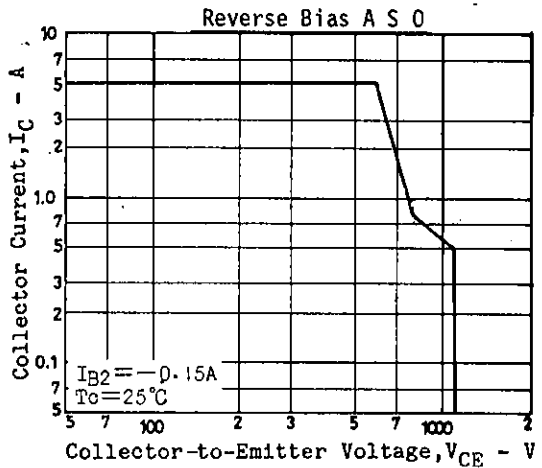
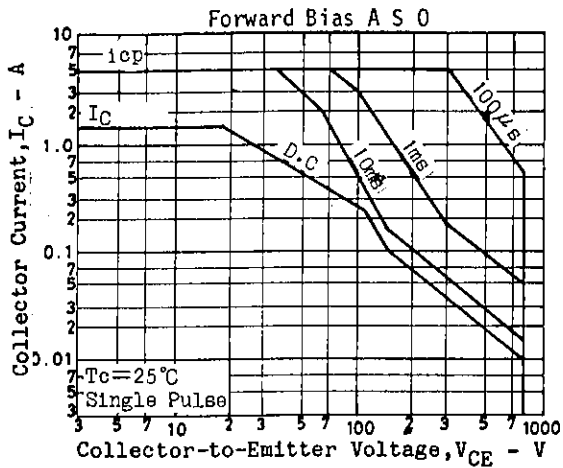
0.5  $\mu s$   
 3.0  $\mu s$   
 0.3  $\mu s$

Switching Time Test Circuit



Unit (Resistance : Ω, Capacitance : F)





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