

SANYO

No.1971A

2SC3752NPN 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 $T_a=25^\circ\text{C}$

			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	3	A
Peak Collector Current	i_{cp}	$PW \leq 300\mu\text{s}, \text{Duty cycle} \leq 10\%$	
Base Current	I_B	1.5	A
Collector Dissipation	P_C	30	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

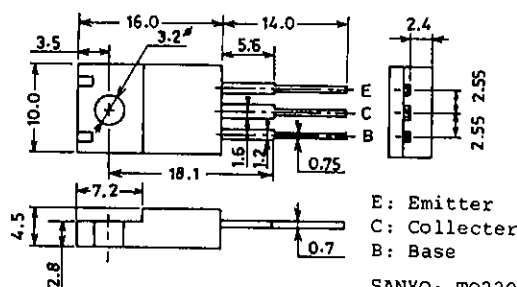
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=800\text{V}, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=0.2\text{A}$	10*		40*	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1\text{A}$	8			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.2\text{A}$		15		MHz
Output Capacitance	c_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		60		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1.5\text{A}, I_B=0.3\text{A}$			2.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5\text{A}, I_B=0.3\text{A}$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$		1100		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5\text{mA}, R_{BE}=\infty$		800		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$		7		V

Continued on next page.

*: The $h_{FE(1)}$ of the 2SC3752 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
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Package Dimensions 2041
(unit:mm)E: Emitter
C: Collector
B: Base

SANYO: TO220ML

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

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Collector-to-Emitter
Sustain Voltage

$V_{CEX(sus)}$ $I_C=1.5A$,
 $I_{B1}=-I_{B2}=0.3A$,
 $L=2mH$, clamped
 $V_{CC}=400V$,
 $5I_{B1}=-2.5I_{B2}=I_C=2A$,
 $R_L=200ohms$

min typ max unit
800 V

Turn-on Time

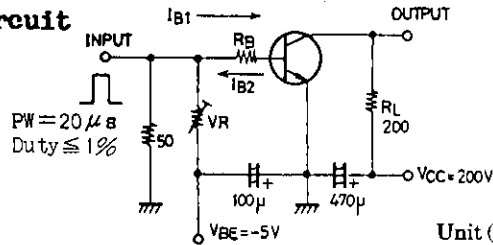
Storage Time

Fall Time

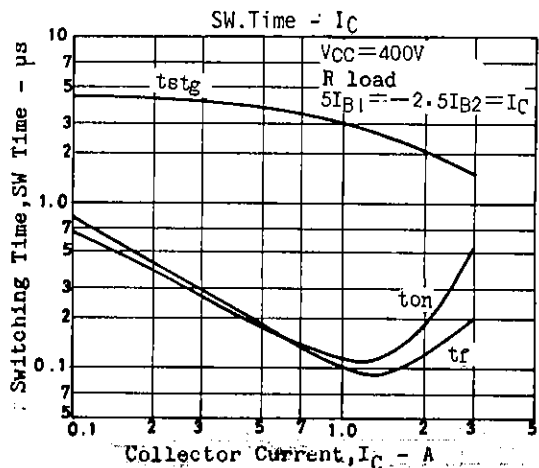
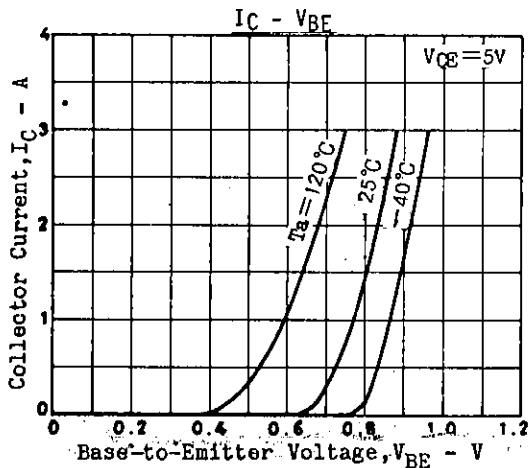
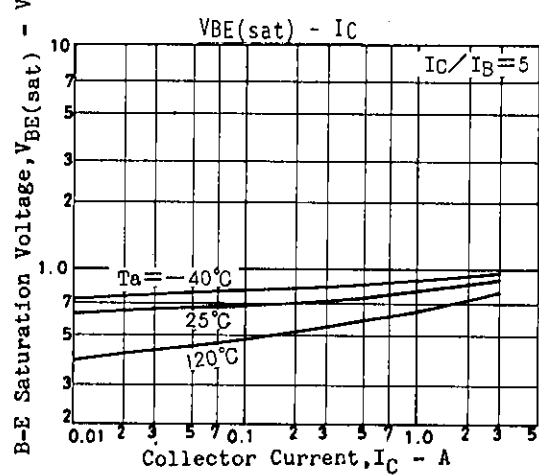
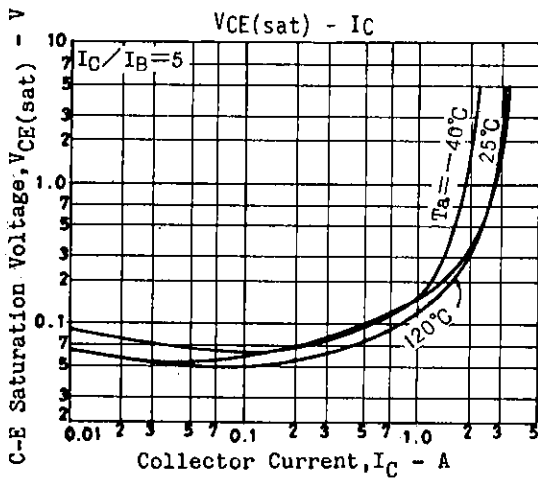
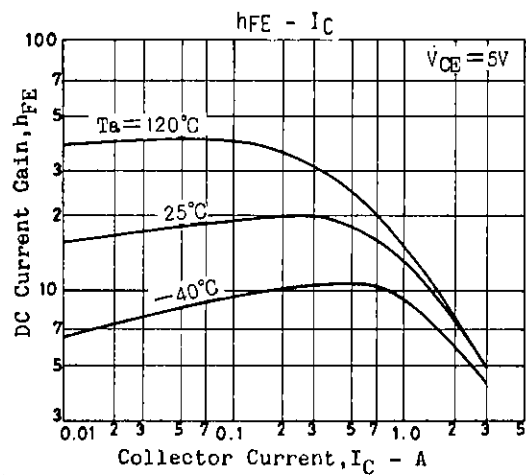
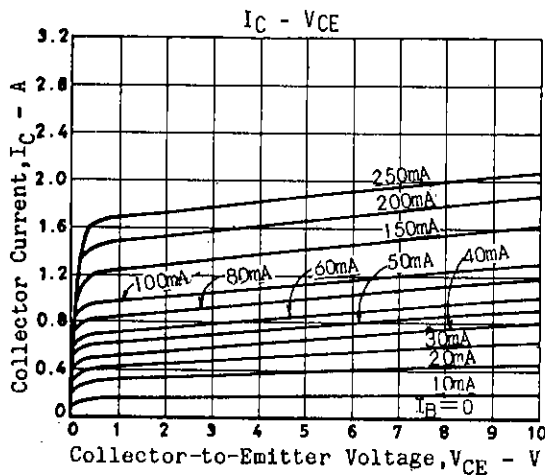
t_{on}
 t_{stg}
 t_f

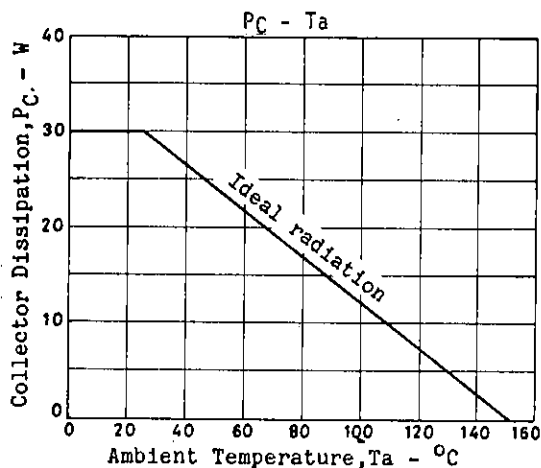
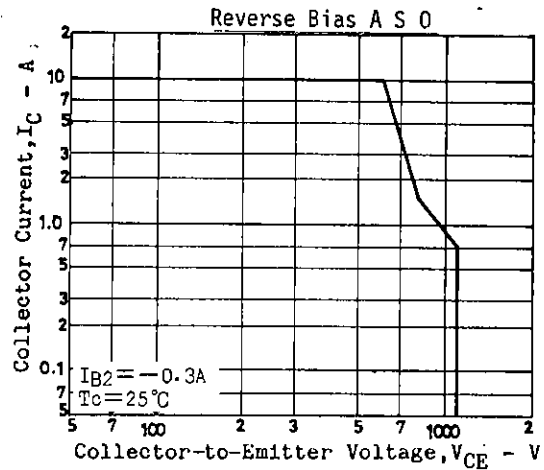
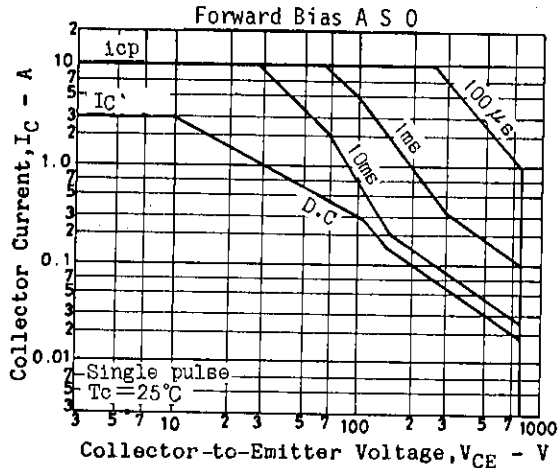
0.5 μs
3.0 μs
0.3 μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)





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