

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

			unit
Collector-to-Base Voltage	V_{CB0}	1100	V
Collector-to-Emitter Voltage	V_{CE0}	800	V
Emitter-to-Base Voltage	V_{EB0}	7	V
Collector Current	I_C	1.5	A
Peak Collector Current	i_{cp}	$PW \leq 300\mu s, \text{Duty cycle} \leq 10\%$	
Base Current	I_B	0.8	A
Collector Dissipation	P_C	25	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}	$V_{CB}=800V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5V, I_C=0.1A$	10*		40*	
	$h_{FE(2)}$	$V_{CE}=5V, I_C=0.5A$	8			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.1A$		15		MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1\text{MHz}$		35		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.75A, I_B=0.15A$			2.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.75A, I_B=0.15A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C=1mA, I_E=0$	1100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CE0}$	$I_C=5mA, R_{BE}=\infty$	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E=1mA, I_C=0$	7			V

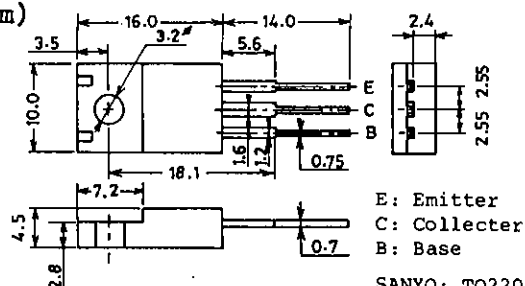
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*: The $h_{FE(1)}$ of the 2SC3751 is classified as follows. When specifying the $h_{FE(1)}$ rank, specify two ranks or more in principle.

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

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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

 t_{on}

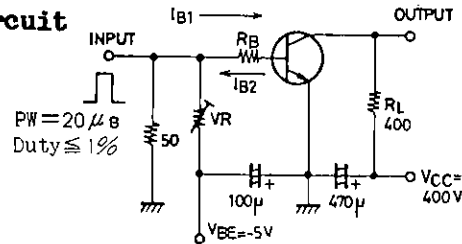
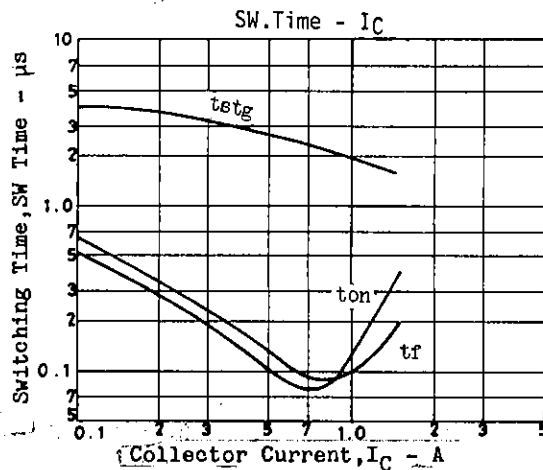
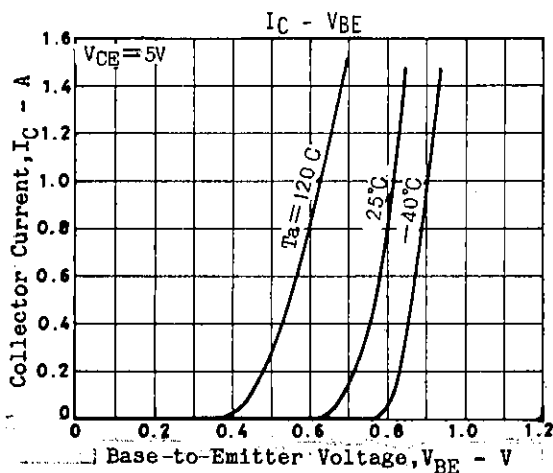
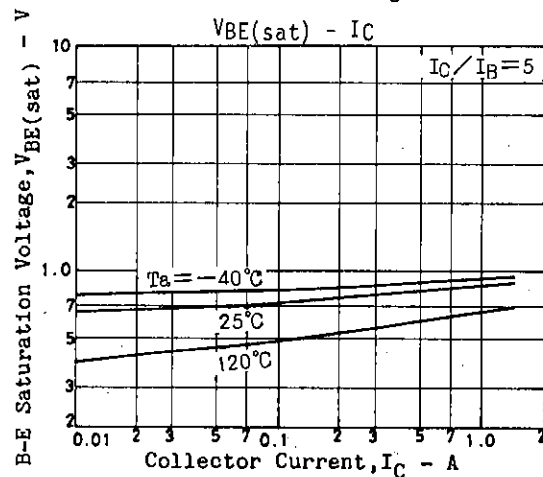
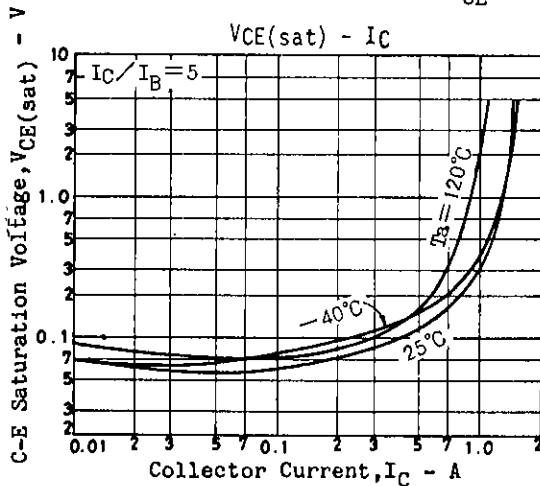
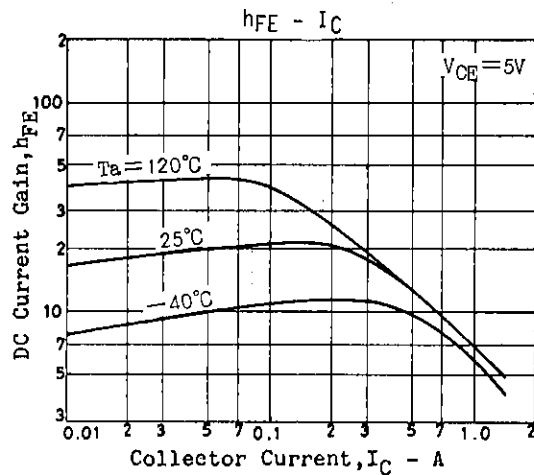
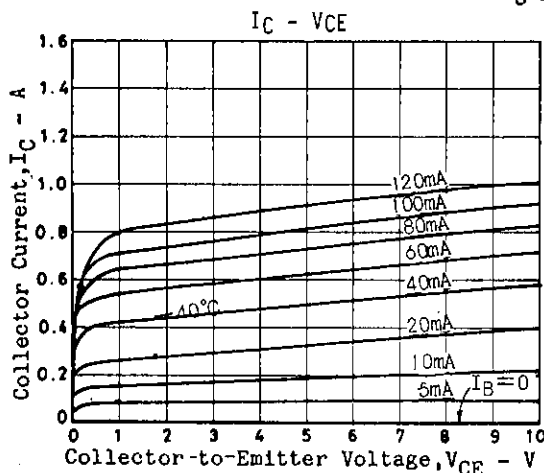
Storage Time

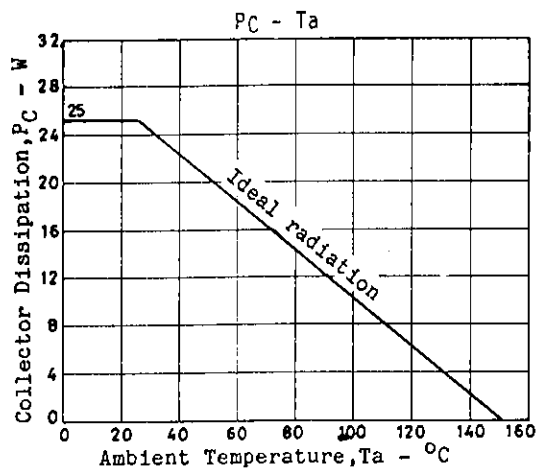
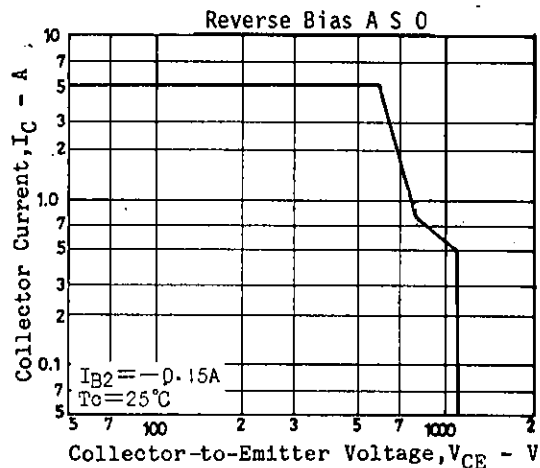
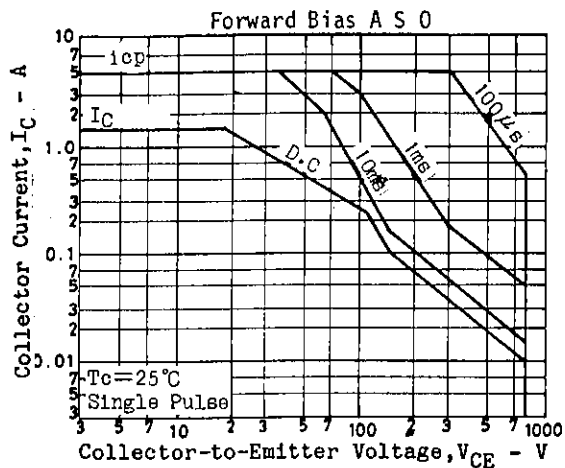
 t_{stg}

Fall Time

 t_f $V_{CC} = 400V,$
 $5I_{B1} = -2.5I_{B2} = I_C = 1A,$
 $R_L = 400ohms$ 0.5 μs 3.0 μs 0.3 μs

Switching Time Test Circuit

Unit (Resistance : Ω , Capacitance : F)



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