Ordering number: EN 1970A

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_{CBO}		1100	V
Collector-to-Emitter Voltage	V_{CEO}		800	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		1.5	A
Peak Collector Current	i_{cp}	PW≦300μs, Duty cycle ≦10%	5	A
Base Current	I_B		0.8	A
Collector Dissipation	P_C	Tc=25°C	25	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=0.1A	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=1MHz		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	$V_{(BR)CBO}$	I_C=1mA, I_E=0	1100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, R_{BE}=∞	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	7			V

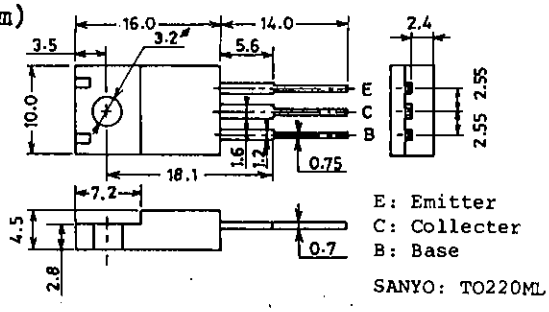
Continued on next page.

*: 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

Package Dimensions 2041

(unit: mm)



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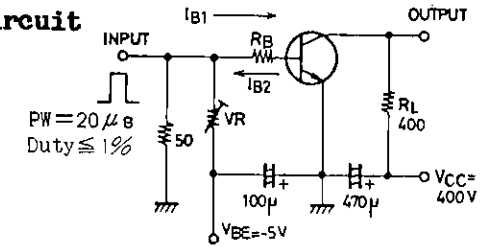
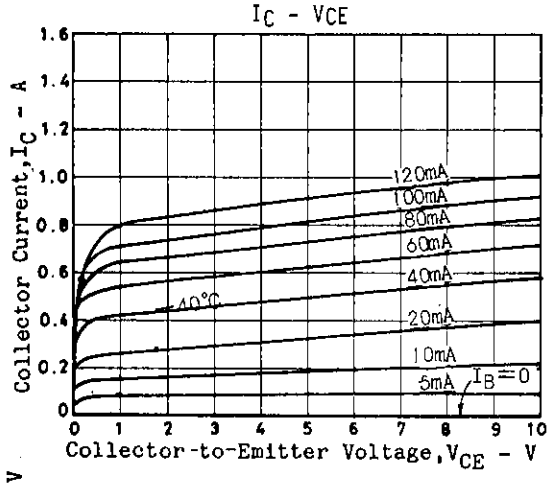
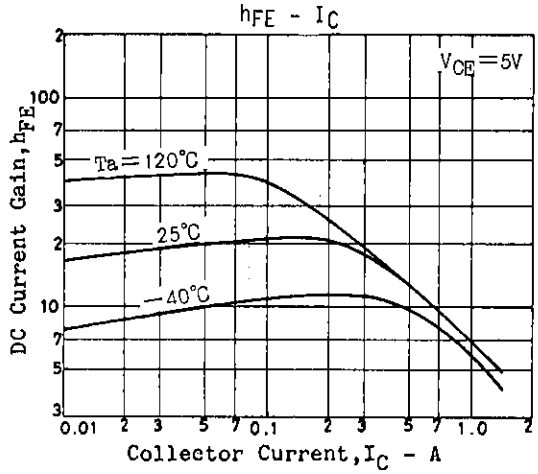
			min	typ	max	unit
Collector-to-Emitter Sustain Voltage	$V_{CEX(sus)}$	I_C=0.75A, I_{B1}=-I_{B2}=0.15A, L=5mH, clamped	800			V
Turn-on Time	t_{on}	V_{CC}=400V, $5I_{B1}$=-$2.5I_{B2}$=I_C=1A, R_L=400ohms			0.5	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				0.3	μs

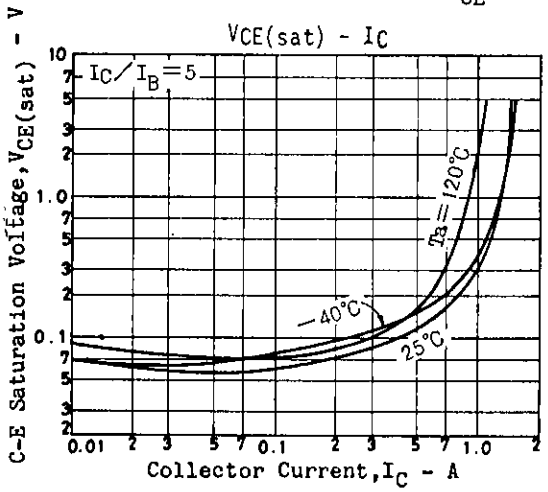
Switching Time Test Circuit

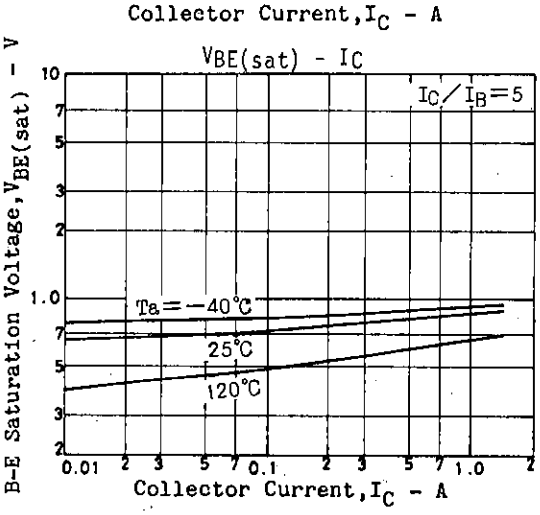


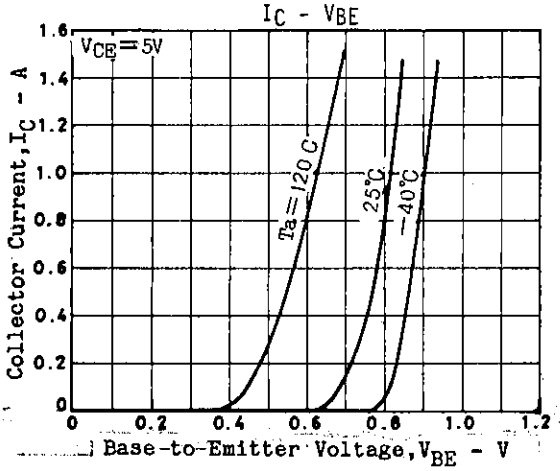
Unit (Resistance : Ω, Capacitance : F)

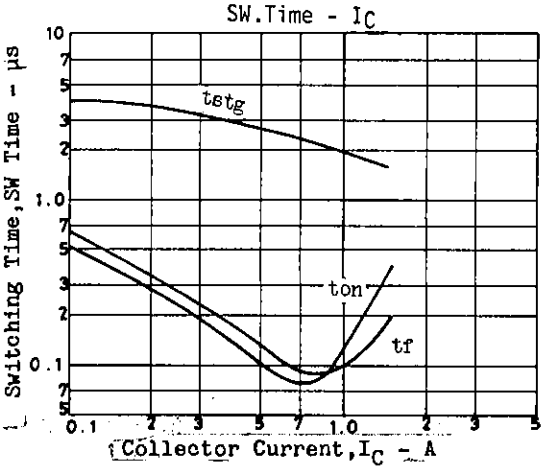




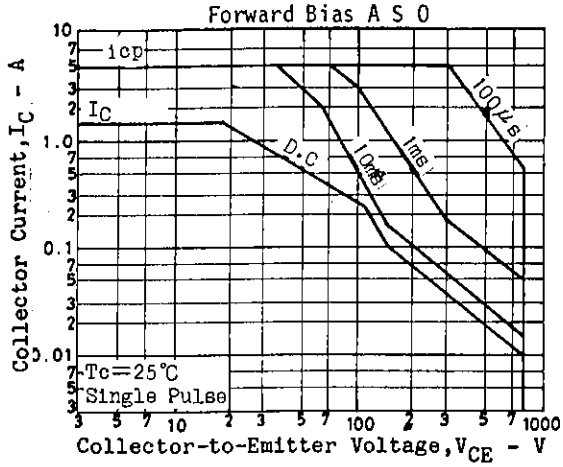




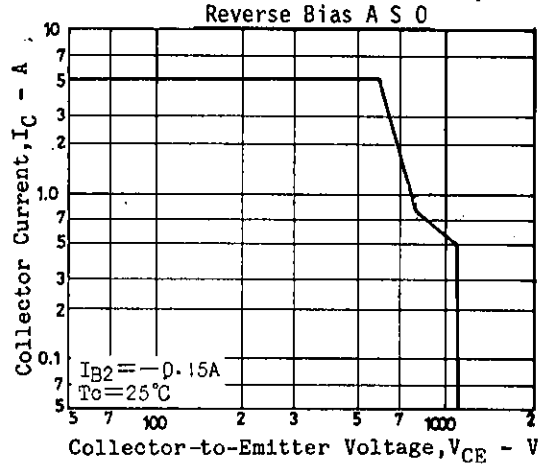




Forward Bias A S O



Reverse Bias A S O



PC - Ta