

SANYO

No. 1969A

2SC3750

NPN Triple Diffused Planar Type Silicon Transistor

SWITCHING REGULATOR APPLICATIONS

Features

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

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$				unit
Collector-to-Base Voltage	V_{CB0}		800	V
Collector-to-Emitter Voltage	V_{CE0}		500	V
Emitter-to-Base Voltage	V_{EB0}		7	V
Collector Current	I_C		5	A
Peak Collector Current	i_{cp}	$PW \leq 300\mu\text{s}, \text{Duty cycle} \leq 10\%$	10	A
Base Current	I_B		2	A
Collector Dissipation	P_C	$T_c=25^{\circ}\text{C}$	30	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

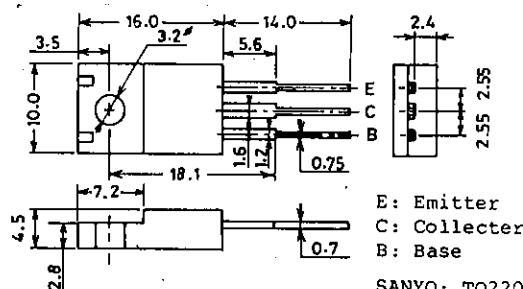
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=500\text{V}, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=0.6\text{A}$	15*		50*	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=3\text{A}$	8			
Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.6\text{A}$		18		MHz
Output Capacitance	c_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		80		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3\text{A}, I_B=0.6\text{A}$			1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3\text{A}, I_B=0.6\text{A}$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	800			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5\text{mA}, R_{BE}=\infty$	500			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	7			V

*: The 2SC3750 is classified by 0.6A h_{FE} as follows:

15	L	30	20	M	40	30	N	50
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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 $V_{CEX(sus)}$ $I_C = 2.5A,$
 $I_{B1} = -I_{B2} = 1A,$
 $L = 1mH, C_{lamped}$ min typ max unit
500 V

Turn-on Time

 t_{on} $V_{CC} = 200V,$ 0.5 μs

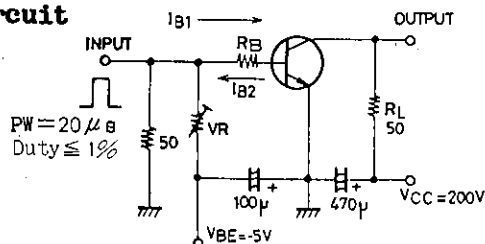
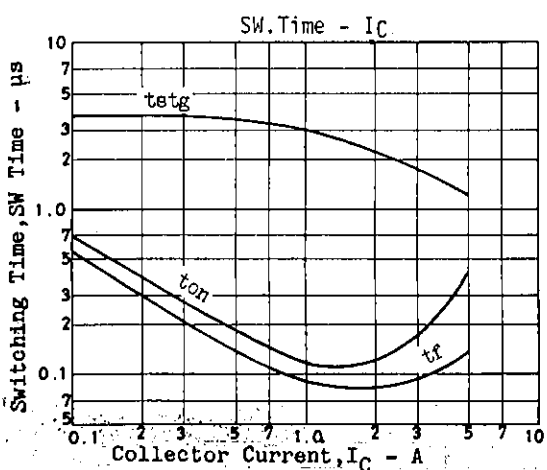
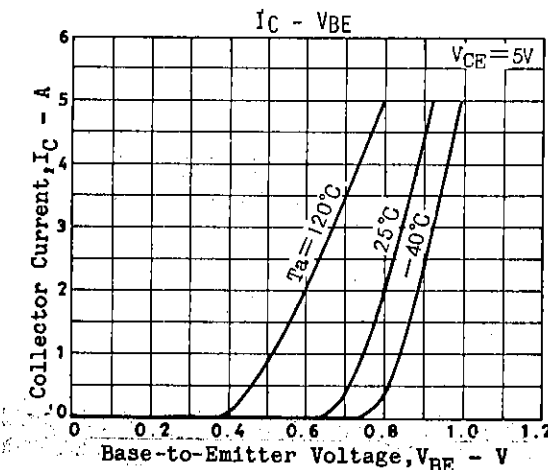
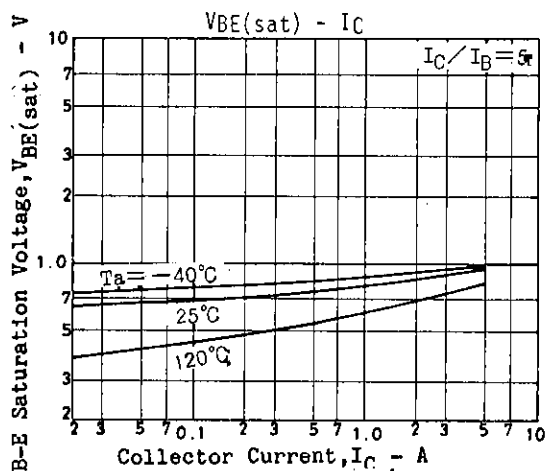
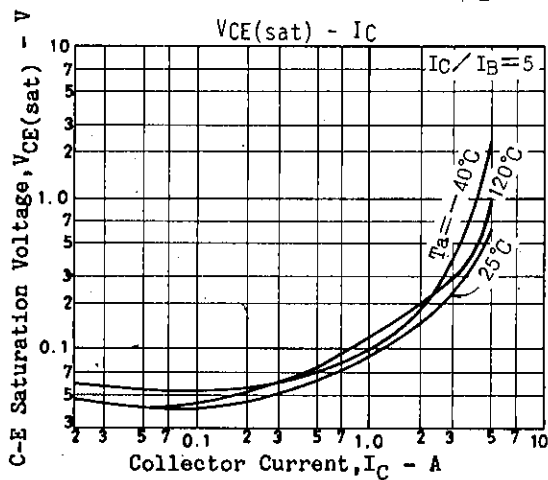
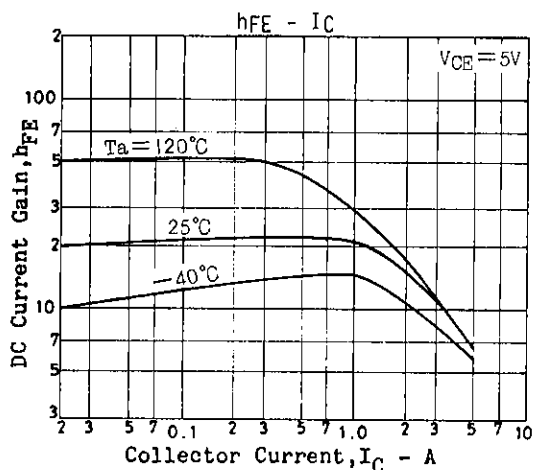
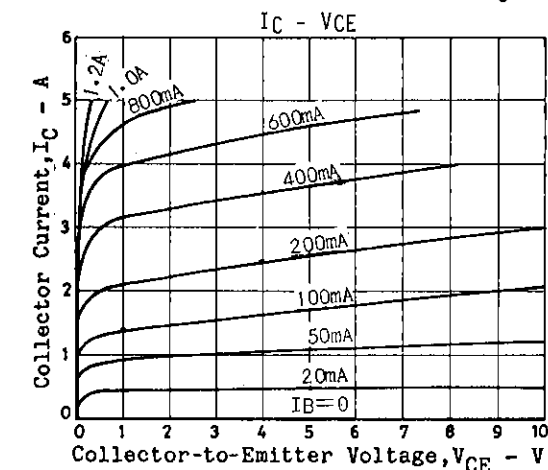
Storage Time

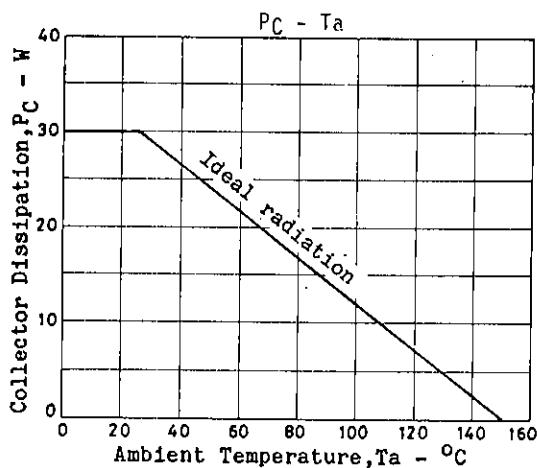
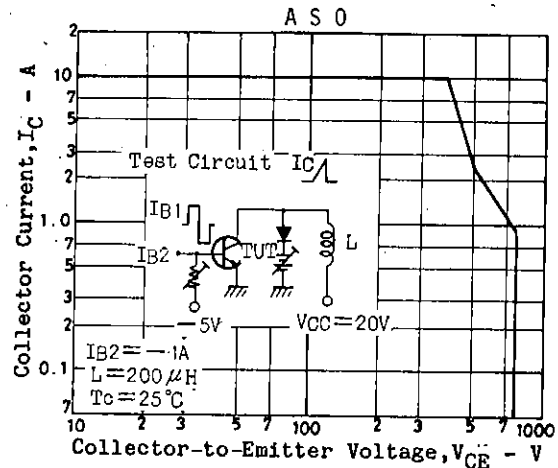
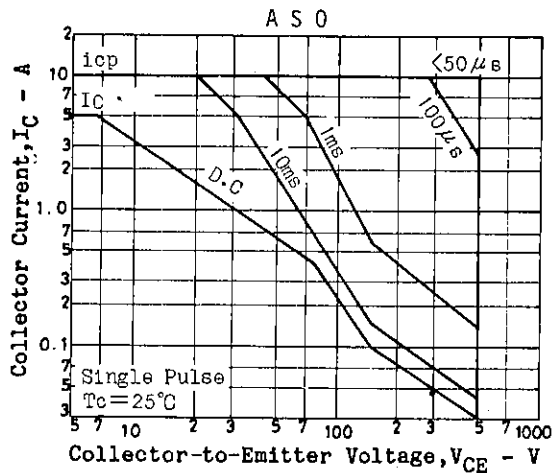
 t_{stg} $5I_{B1} = -2.5I_{B2} = I_C = 4A,$ 3.0 μs

Fall Time

 t_f $R_L = 50ohm$ 0.3 μs

Switching Time Test Circuit

Unit (Resistance : Ω , Capacitance : F)



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