

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 Ta=25°C

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

Electrical Characteristics at Ta=25°C

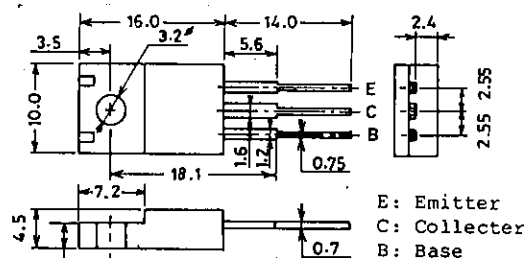
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=500V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5V, I_C=0.6A$	15*		50*	
	$h_{FE}(2)$	$V_{CE}=5V, I_C=3A$	8			
Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.6A$		18		MHz
Output Capacitance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

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*: 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

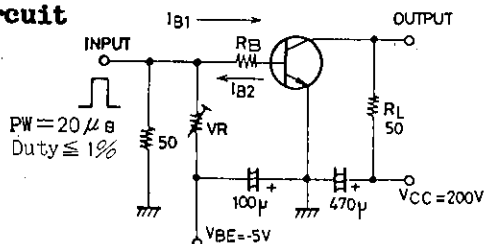
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Collector-to-Emitter Sustain Voltage

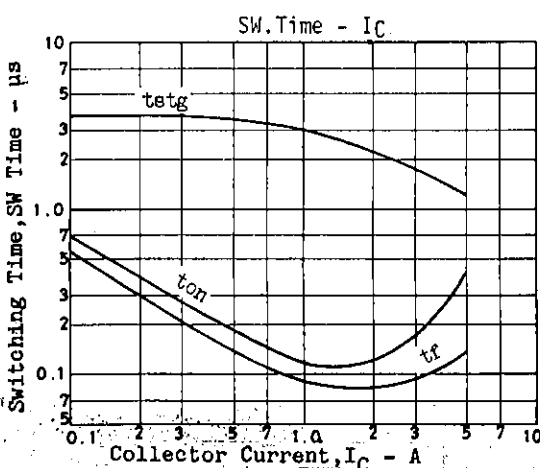
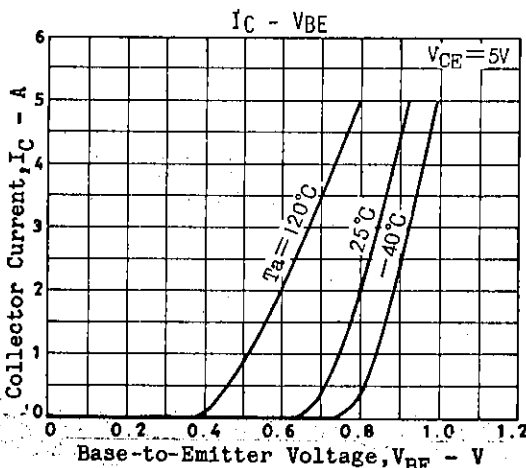
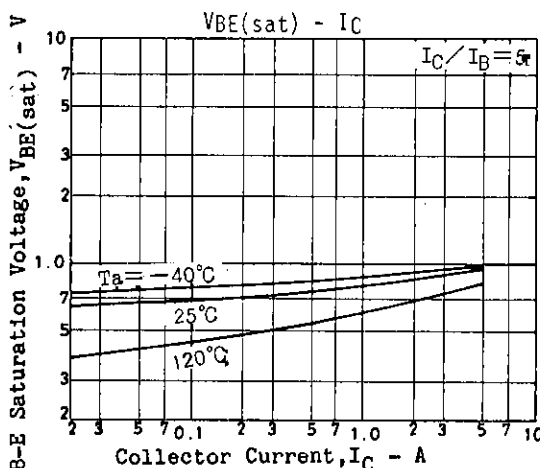
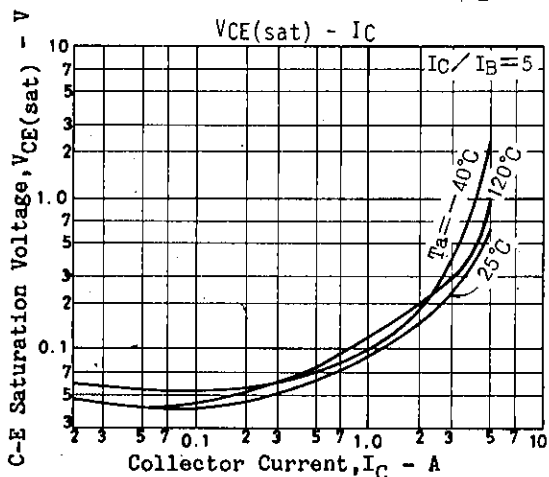
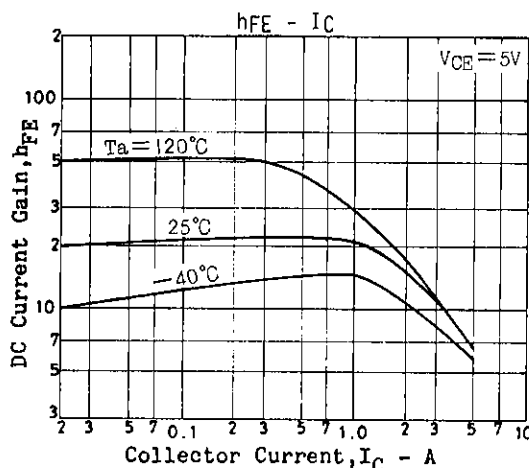
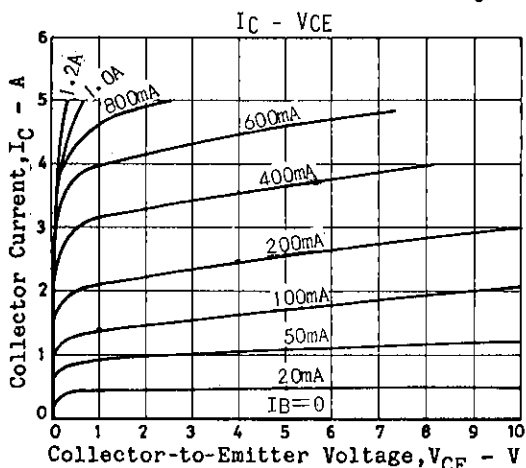
$V_{CEX}(sus)$ $I_C=2.5A,$
 $I_{B1}=-I_{B2}=1A,$
 $L=1mH, Clamped$
 t_{on} $V_{CC}=200V,$
 t_{stg} $5I_{B1}=-2.5I_{B2}=I_C=4A,$
 t_f $R_L=50ohm$

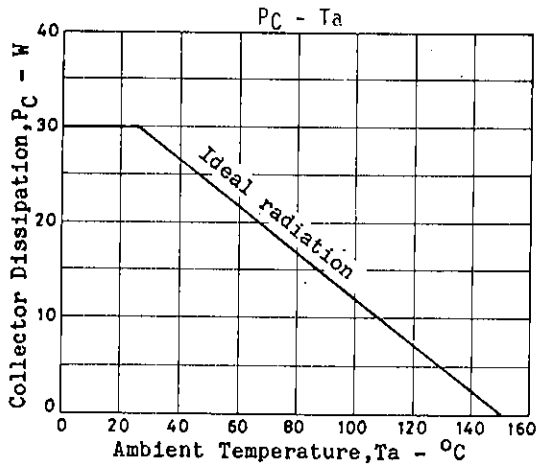
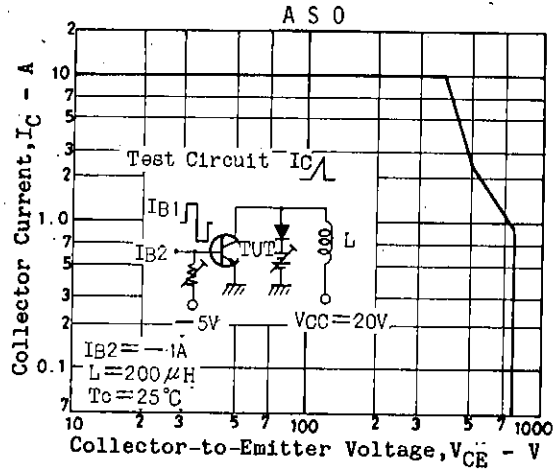
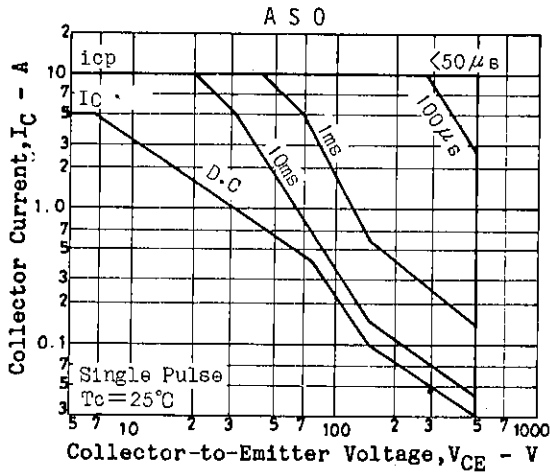
	min	typ	max	unit
Collector-to-Emitter Sustain Voltage	500			V
Turn-on Time		0.5		μs
Storage Time		3.0		μs
Fall Time		0.3		μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)





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