

SANYO	No.2485A	2 S C 4.1 6 4
		NPN Triple Diffused Planar Type Silicon Transistor
SWITCHING REGULATOR APPLICATIONS		

Features

- . High breakdown voltage and high reliability
- . Fast switching speed ($t_F=0.1\mu s$ typ)
- . Wide ASO
- . Adoption of MBIT process

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

			unit
Collector-to-Base Voltage	V_{CBO}	500	V
Collector-to-Emitter Voltage	V_{CEO}	400	V
Emitter-to-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	12	A
Peak Collector Current	i_{cp}	$PW \leq 300\mu s, \text{duty cycle} \leq 10\%$	25 A
Base Current	I_B	4	A
Collector Dissipation	P_C	1.75	W
		$T_c=25^\circ C$	70 W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

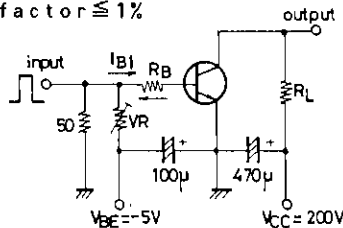
Electrical Characteristics at $T_a=25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=400V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=1.6A$	15*		50*	
	h_{FE2}	$V_{CE}=5V, I_C=8A$	10			
	h_{FE3}	$V_{CE}=5V, I_C=10mA$	10			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=1.6A$		20		MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1MHz$		160		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=8A, I_B=1.6A$			0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=8A, I_B=1.6A$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, R_{BE}=\infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V

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Switching Time Test Circuit

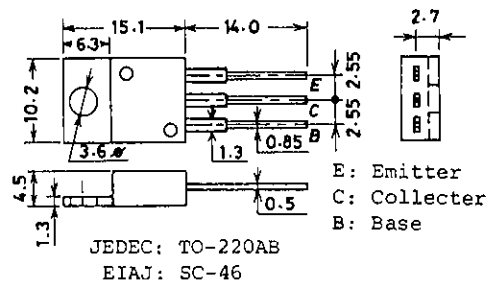
$PW=20\mu s, \text{duty factor} \leq 1\%$



Unit (Resistance : Ω , Capacitance : F)

Package Dimensions 2010A

(unit:mm)



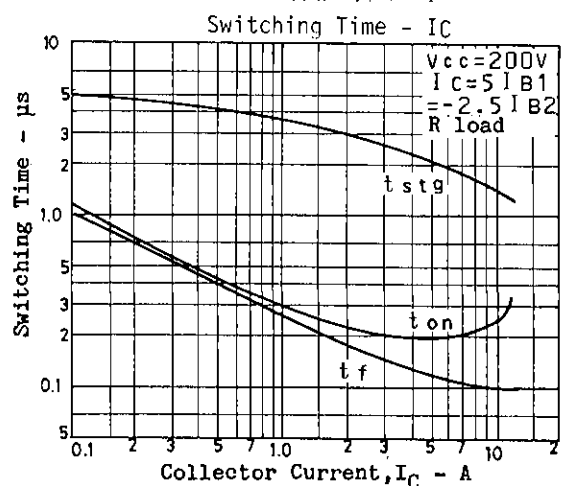
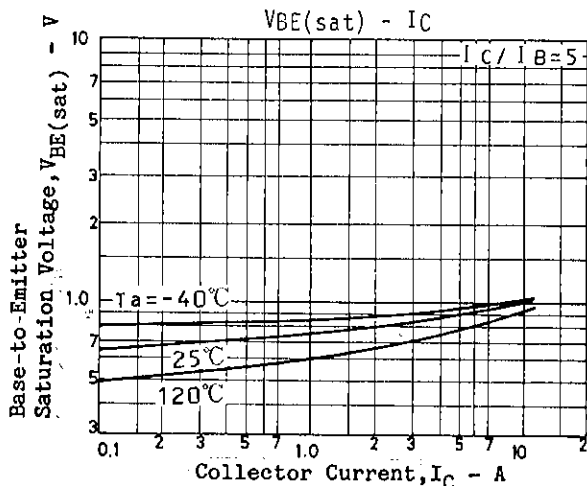
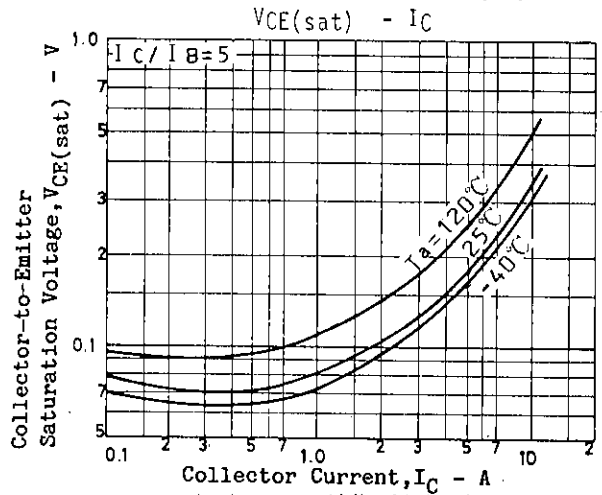
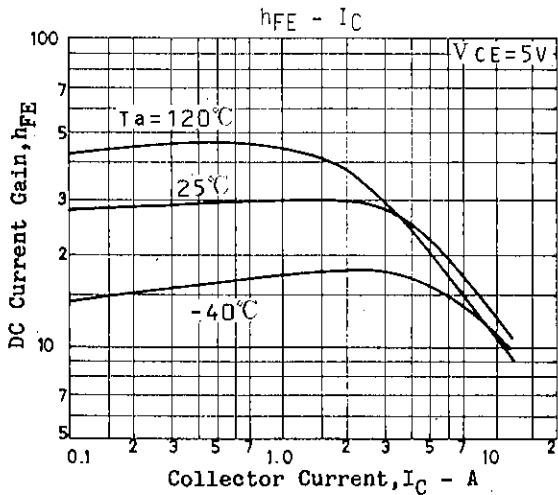
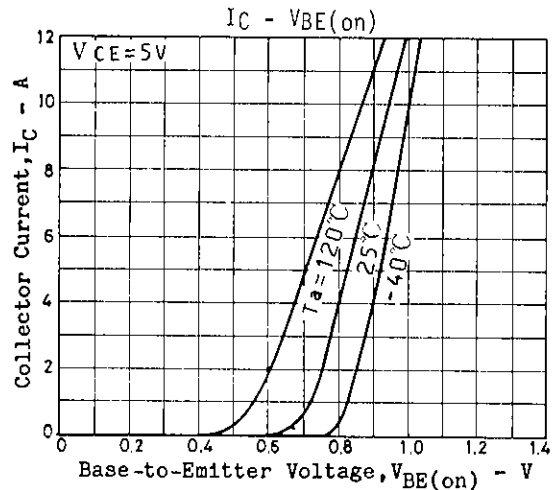
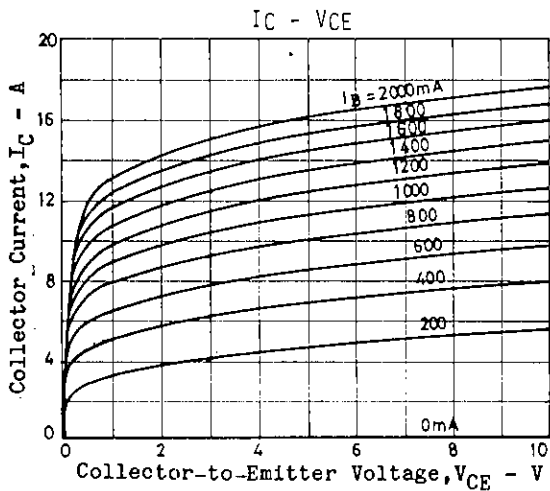
E: Emitter
C: Collector
B: Base

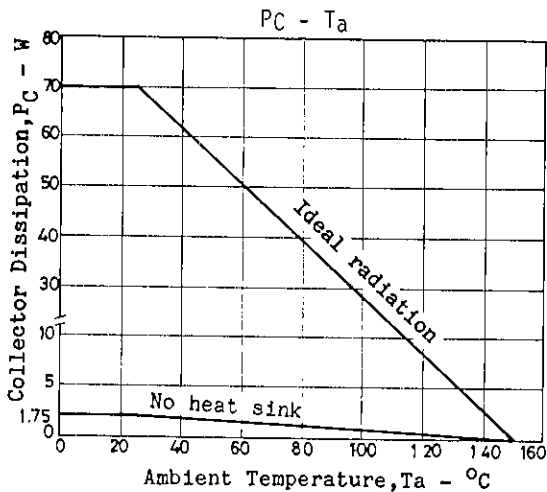
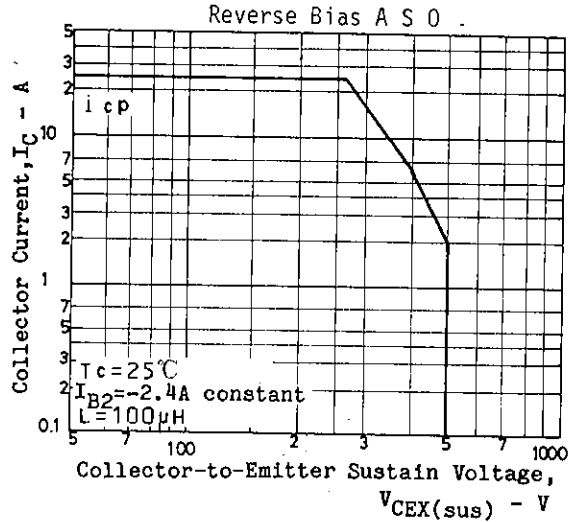
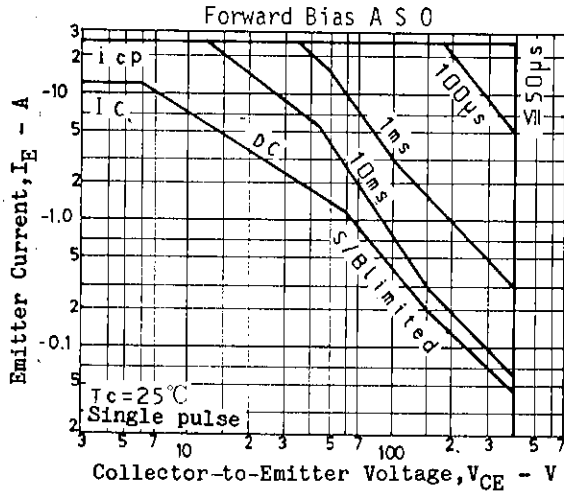
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			min	typ	max	unit
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=6A, I_{B1}=0.6A,$ $I_{B2}=-2.4A, L=500\mu H, \text{clamped}$	400			V
Turn-on Time	t_{on}	$I_C=10A, I_{B1}=2A, I_{B2}=-4A,$ $R_L=20\text{ohms}, V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}	" "			2.5	μs
Fall Time	t_f	" "			0.3	μs

*: The h_{FE1} of the 2SC4164 is classified as follows. When specifying the h_{FE1} rank, specify two ranks or more in principle.

15	L	30	20	M	40	30	N	50
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