

SANYO	No.2836	2SC3991
NPN Triple Diffused Planar Silicon Transistor		
Switching Regulator Applications		

Features

- . High breakdown voltage, high reliability
- . Fast switching speed (t_f :typ 0.1 μ s)
- . Wide ASO
- . Adoption of MBIT process

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	50	A
Peak Collector Current	i_{cp}	70	A
Base Current	I_B	14	A
Collector Dissipation	P_C	3.5	W
Junction Temperature	T_j	300	°C
Storage Temperature	T_{stg}	-55 to +150	°C

$T_C=25^\circ C$

Electrical Characteristics at Ta=25°C

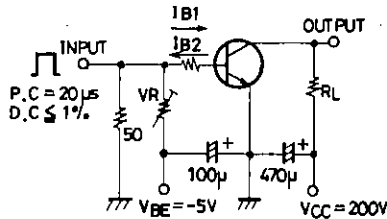
		min	typ	max	unit
Collector Cutoff Current	I_{CBO}			10	μ A
Emitter Cutoff Current	I_{EBO}			10	μ A
DC Current Gain	$h_{FE}(1)^*$		15	50	
	$h_{FE}(2)$		8		

Continued on next page.

*: The $h_{FE}(1)$ of the 2SC3991 is classified as follows. When specifying the $h_{FE}(1)$ rank, specify two ranks or more in principle.

15	L	30	20	M	40	30	N	50
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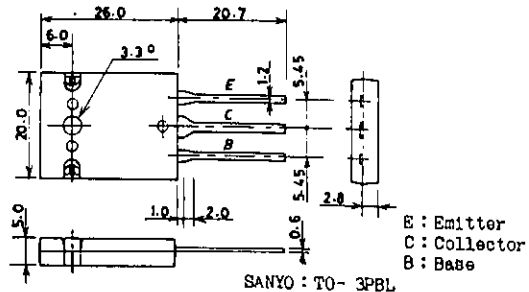
Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)

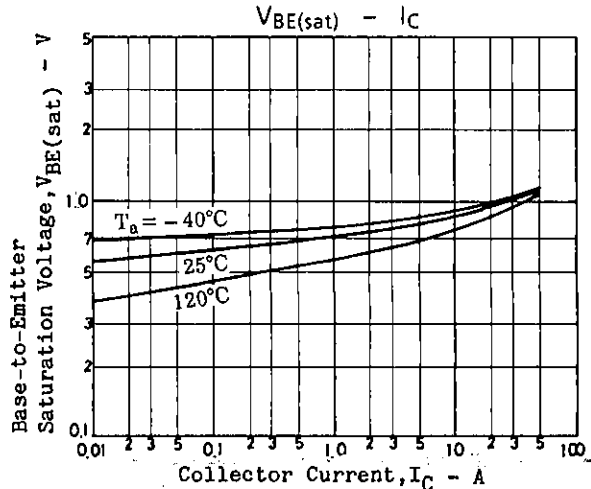
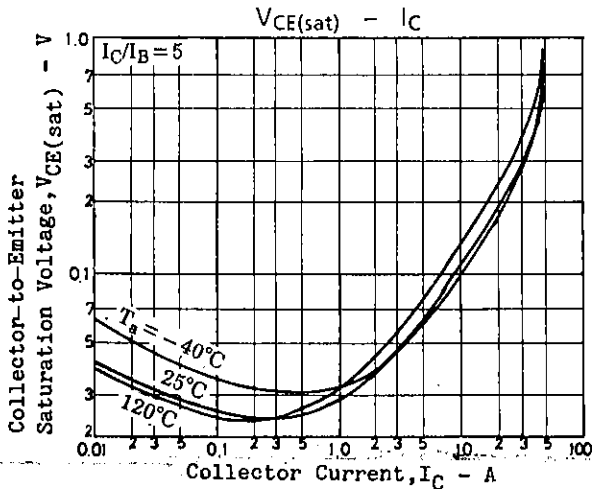
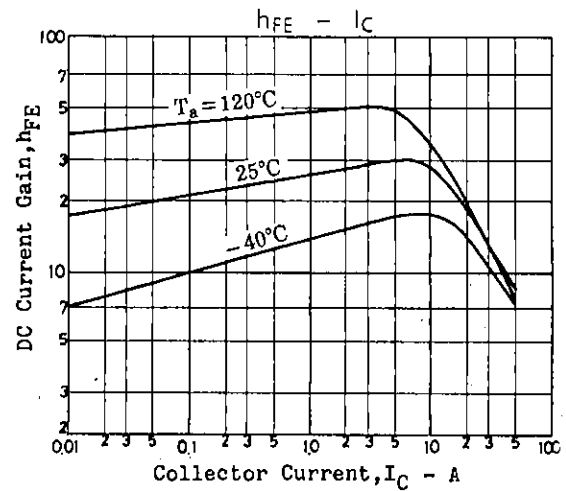
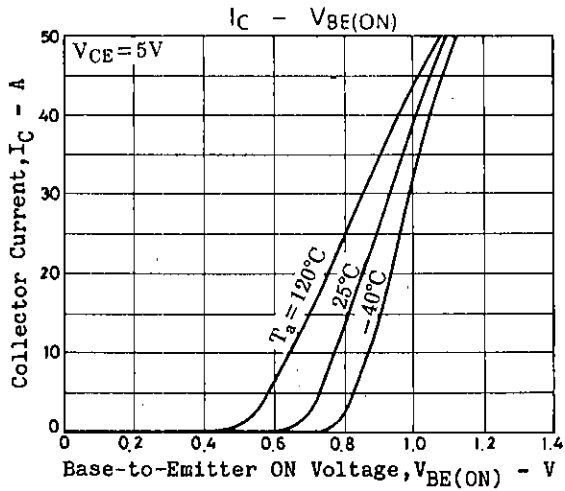
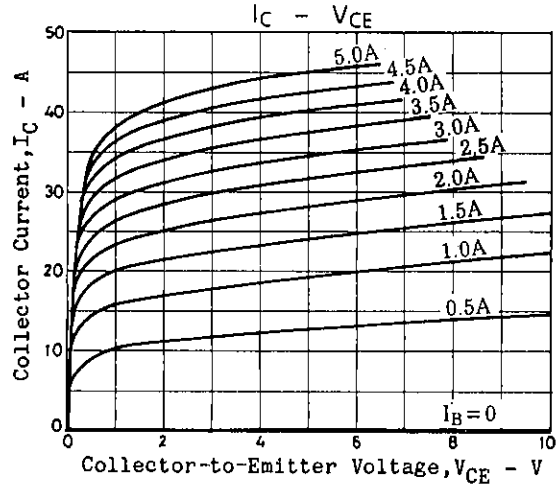
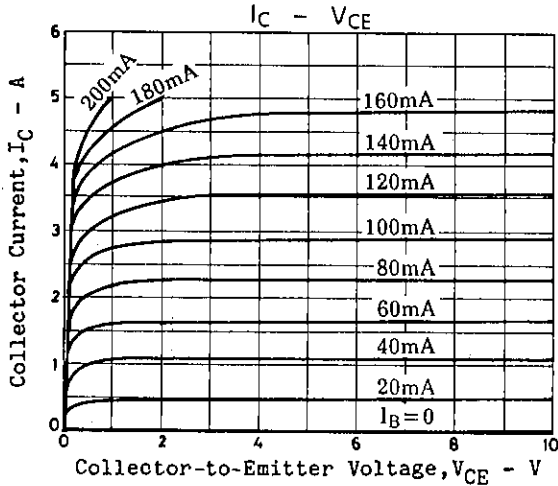
Package Dimensions 2048

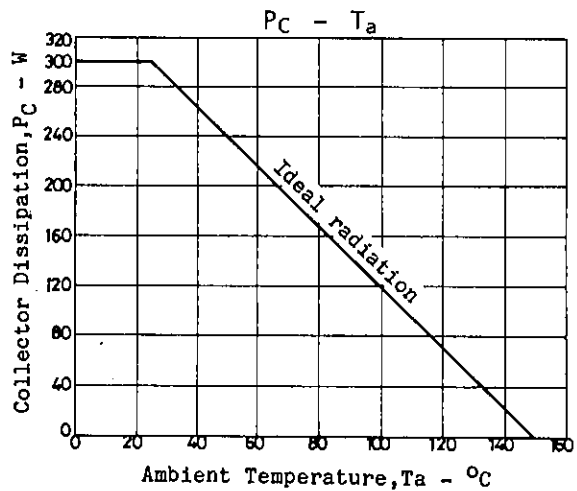
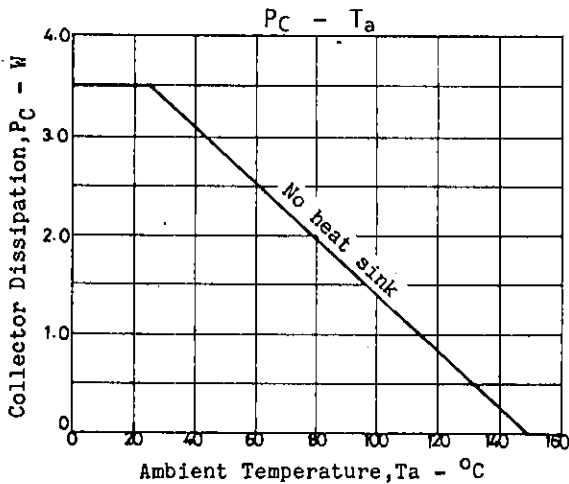
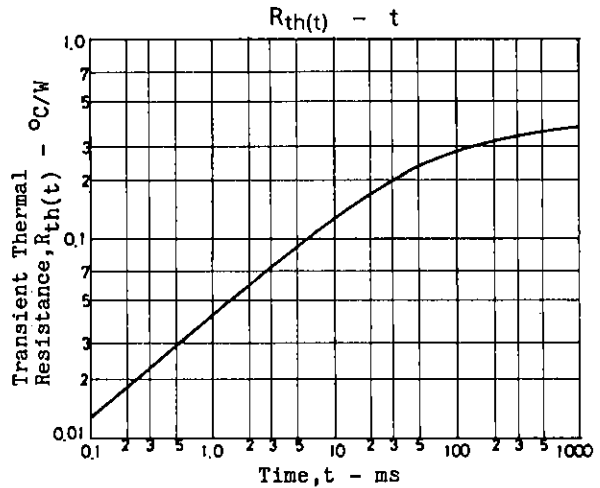
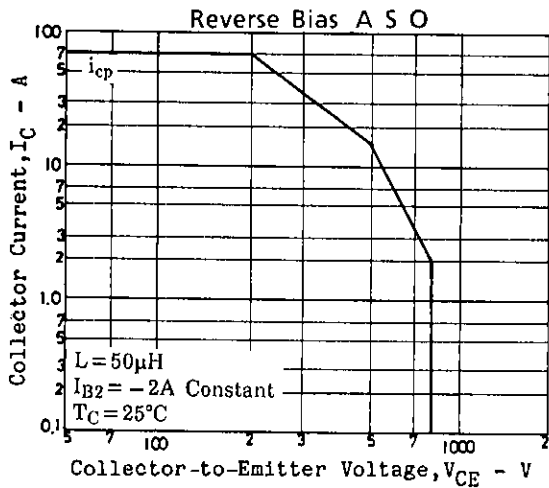
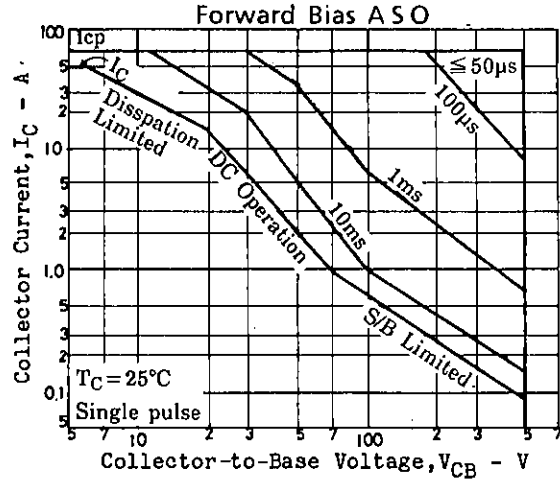
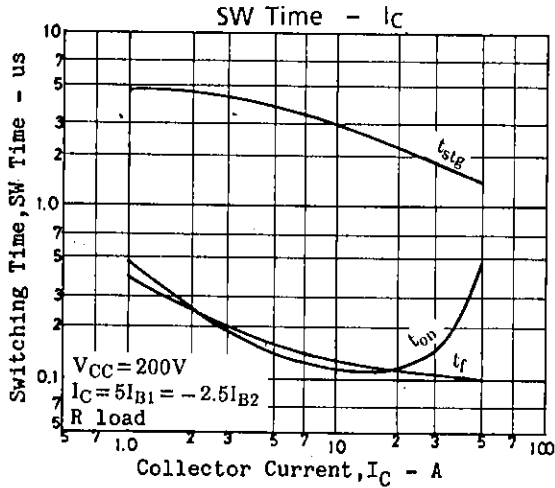
(unit:mm)



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			min	typ	max	unit
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=4.8A$		18		MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1MHz$		560		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=24A, I_B=4.8A$			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=24A, I_B=4.8A$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	800			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, R_{BE}=\infty$	500			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=15A, I_{B1}=-I_{B2}=2A$ $L=100\mu H, clamped$	500			V
Turn-on Time	t_{on}	$V_{CC}=200V$		0.5		μs
Storage Time	t_{stg}	$5I_{B1}=-2.5I_{B2}=I_C=26A$		3.0		μs
Fall Time	t_f	$R_L=7.7ohms$		0.3		μs





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