

SANYO

No.3143

2SC4597

NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

- Surface mount type device making the following possible
 - Reduction in the number of manufacturing processes for 2SC4597-applied equipment
 - High density surface mount applications
 - Small size of 2SC4597-applied equipment
- High breakdown voltage, high reliability
- Fast switching speed
- Wide ASO
- Adoption of MBIT process

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

			unit
Collector to Base Voltage	V_{CB0}	500	V
Collector to Emitter Voltage	V_{CE0}	400	V
Emitter to Base Voltage	V_{EB0}	7	V
Collector Current	I_C	4	A
Collector Current(Pulse)	I_{CP}	$PW \leq 300\mu\text{s}, \text{duty cycle} \leq 10\%$	
		8	A
Base Current	I_B	1.5	A
Collector Dissipation	P_C	1.65	W
		40	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}	$V_{CB} = 400\text{V}, I_E = 0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = 5\text{V}, I_C = 0.4\text{A}$	15※		50※	
	$h_{FE}(2)$	$V_{CE} = 5\text{V}, I_C = 2\text{A}$	10			
	$h_{FE}(3)$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	10			
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 0.4\text{A}$		20		MHz
Output Capacitance	c_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		50		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 2\text{A}, I_B = 0.4\text{A}$			0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 2\text{A}, I_B = 0.4\text{A}$			1.5	V

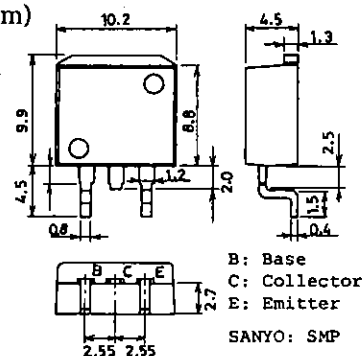
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※ : For the $h_{FE}(1)$ of the 2SC4597, specify two ranks or more in principle.

15	L	30	20	M	40	30	N	50
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Package Dimensions 2069

(unit : mm)

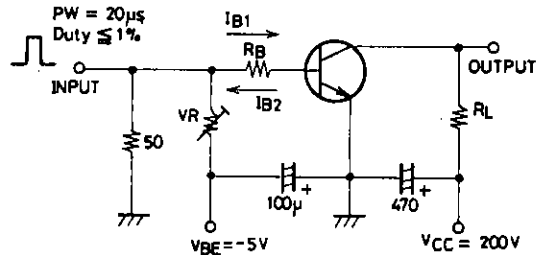
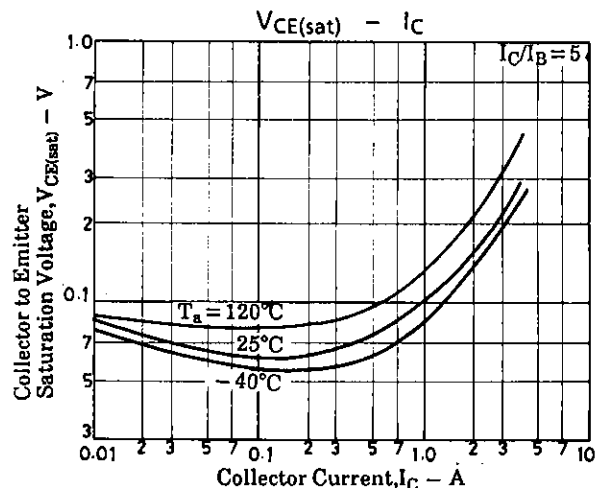
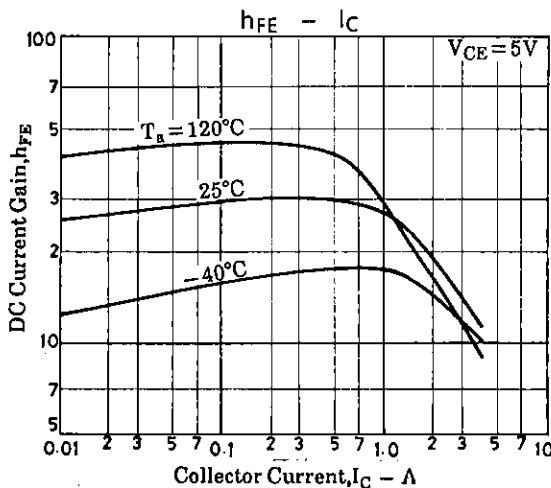
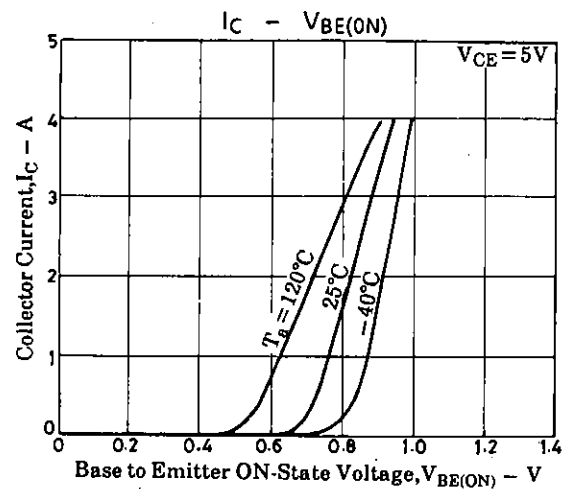
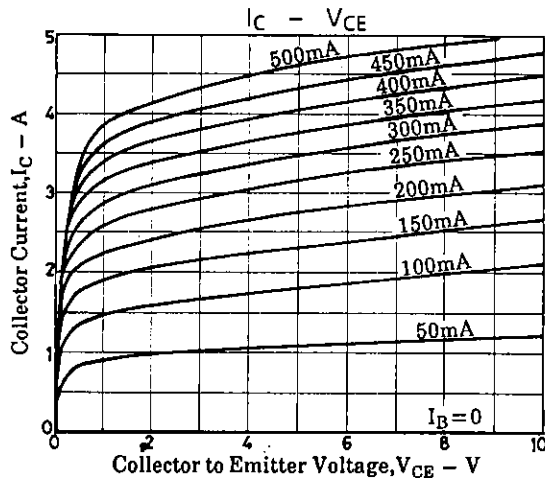


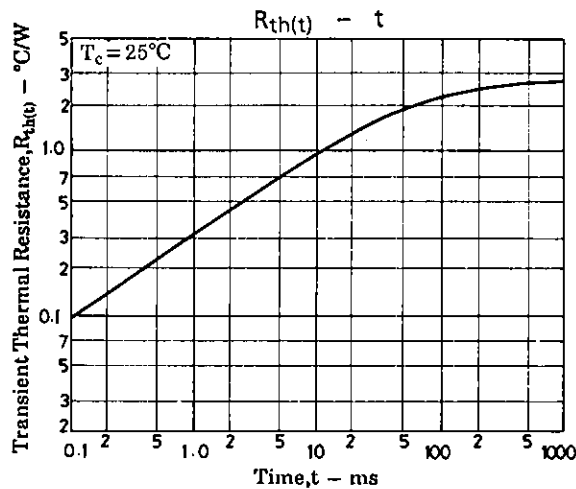
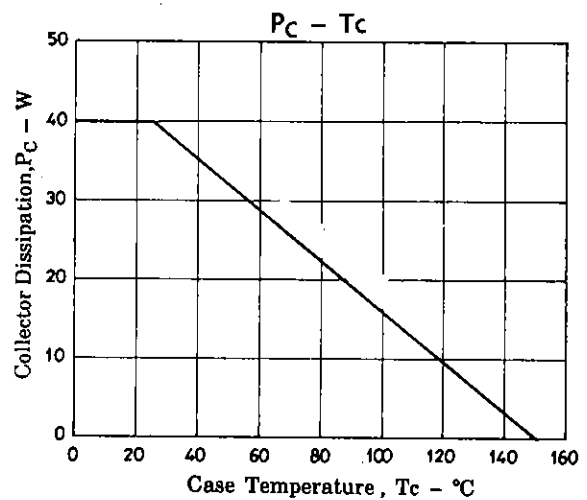
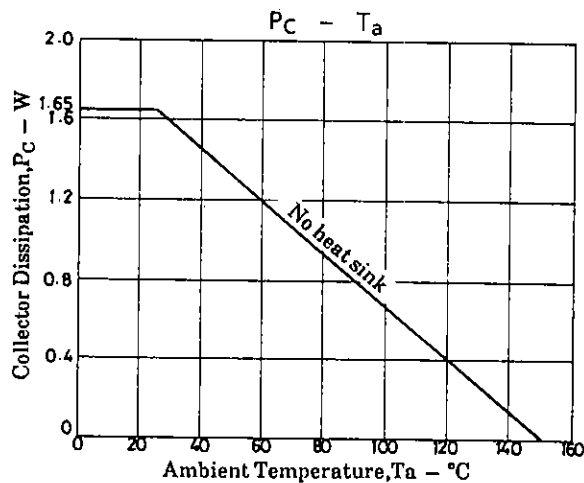
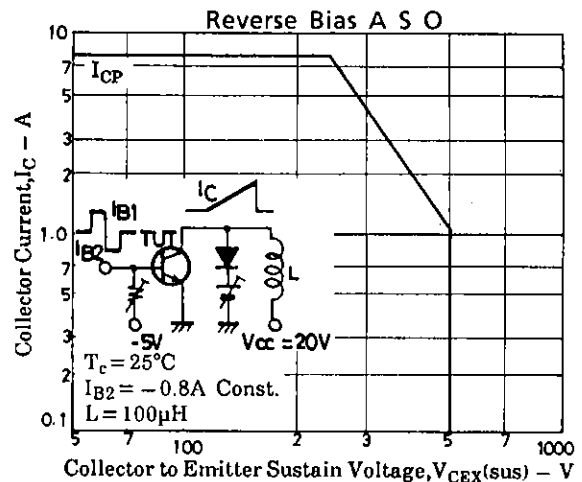
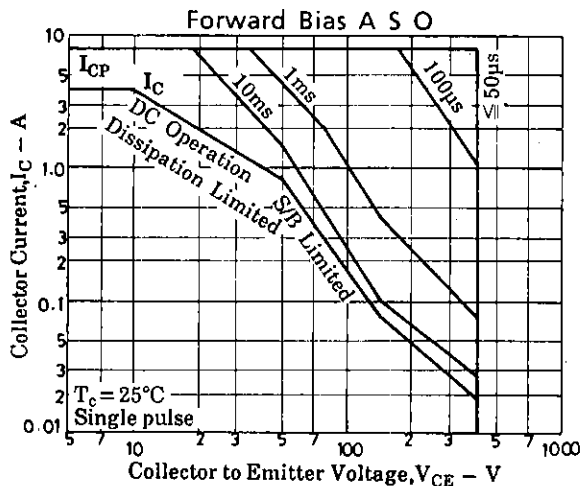
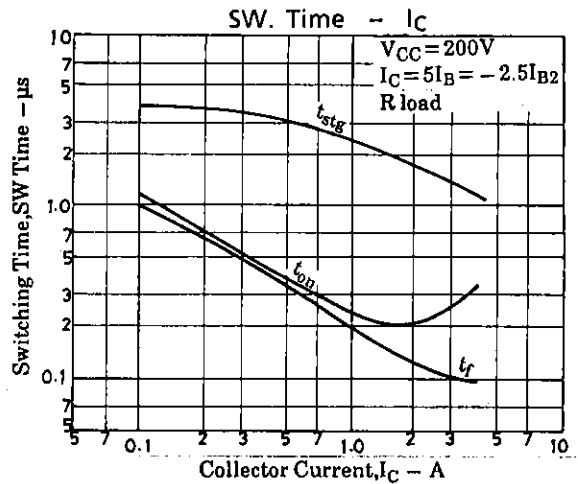
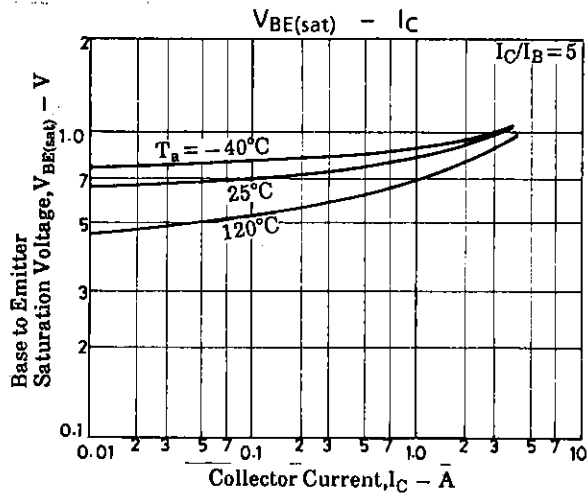
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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}, R_{BE} = \infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	7			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 2\text{A}, I_{B1} = 0.2\text{A},$ $L = 1\text{mH}, I_{B2} = -0.8\text{A}, \text{clamped}$	400			V
Turn-ON Time	t_{on}	$I_C = 3\text{A}, I_{B1} = 0.6\text{A},$ $I_{B2} = -1.2\text{A}, R_L = 66.6\Omega,$ $V_{CC} = 200\text{V}$		0.5		μs
Storage Time	t_{stg}			2.5		μs
Fall Time	t_f			0.3		μs

Switching Time Test Circuit

Unit (Resistance : Ω , Capacitance : F)



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