

**SANYO**

No. 2546A

**2SC4172**

NPN Triple Diffused Planar Silicon Transistor  
Switching Regulator Applications

**Features**

- High breakdown voltage ( $V_{CBO} \geq 800V$ )
- Fast switching speed
- Wide ASO
- Suitable for sets whose height is restricted

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

			unit
Collector to Base Voltage	$V_{CBO}$	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	$i_{cp}$	$PW \leq 300\mu s, Duty\ Cycle \leq 10\%$	10
Base Current	$I_B$	2	A
Collector Dissipation	$P_C$	1.65	W
		$T_c=25^\circ C$	50
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

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

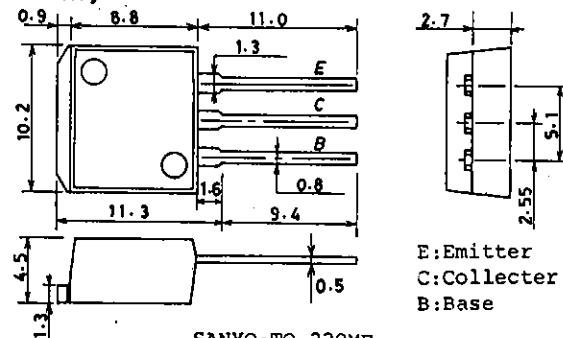
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=500V, I_E=0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			10	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5V, I_C=0.6A$	15*		50*	
	$f_{FE(2)}$	$V_{CE}=5V, I_C=3A$	8			
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=0.6A$			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=0.6A$			1.5	V
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
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	800			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=4mA, R_{BE}=\infty$	500			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V

Continued on next page.

\*: The  $h_{FE(1)}$  of the 2SC4172 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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**Package Dimensions 2049**  
(unit: mm)



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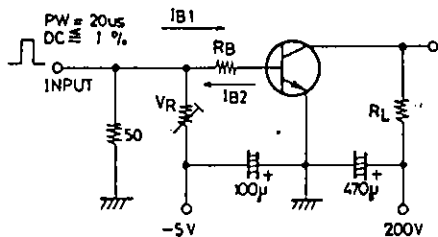
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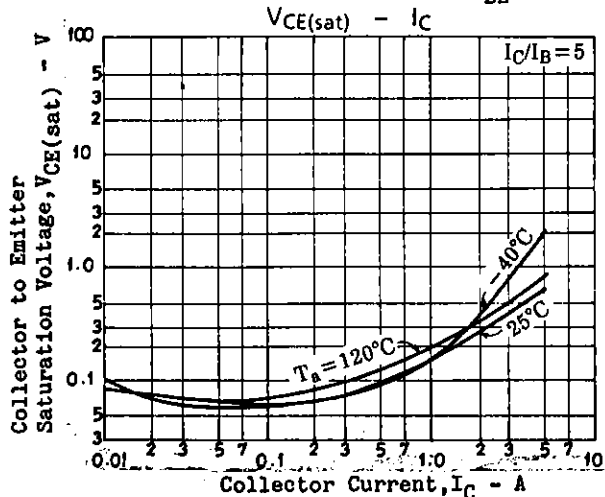
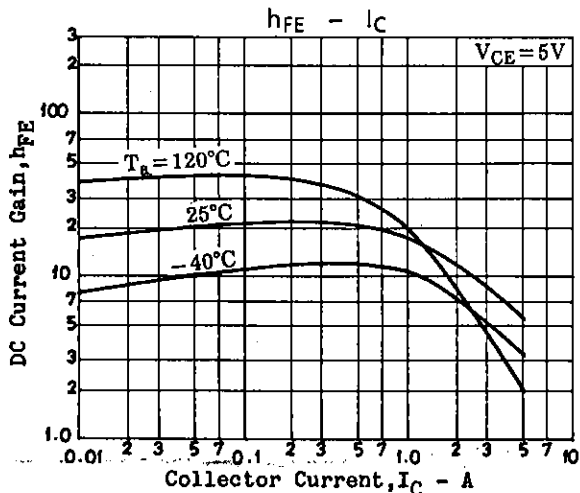
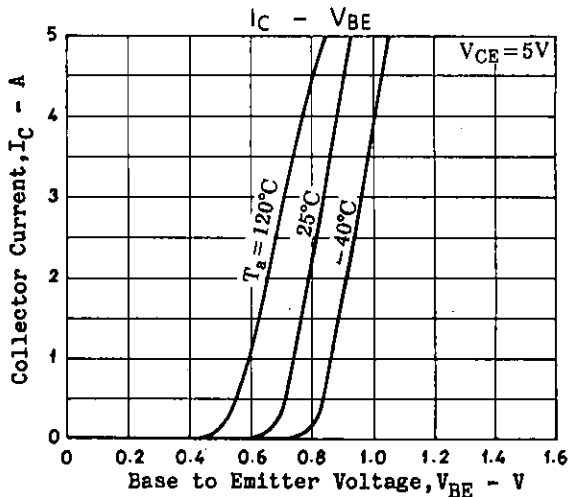
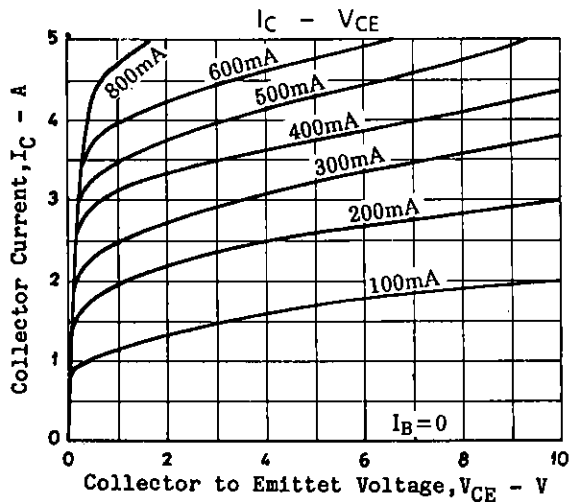
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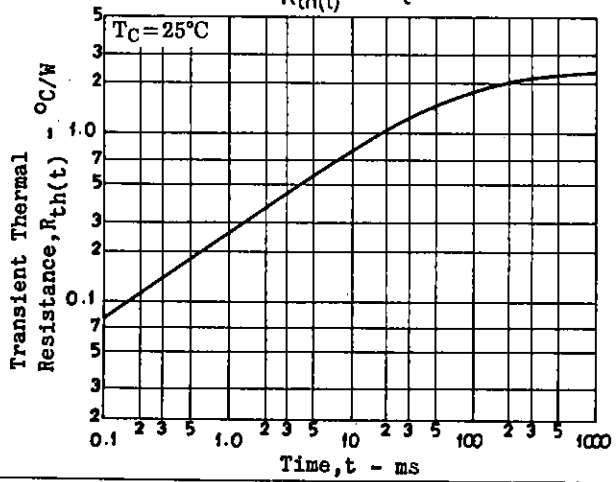
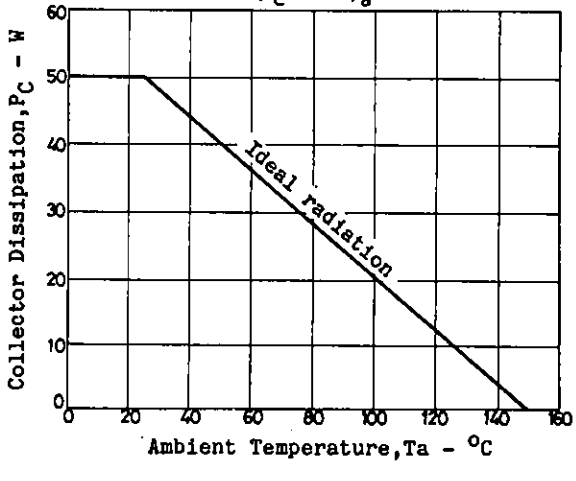
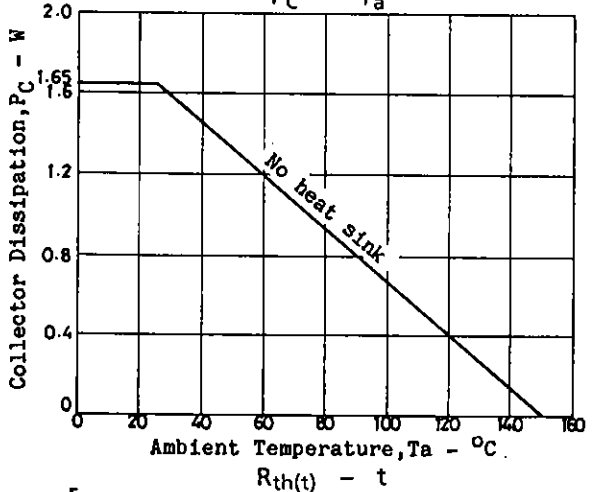
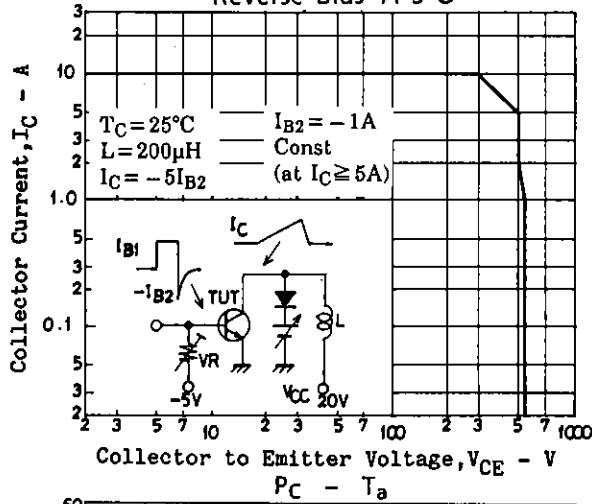
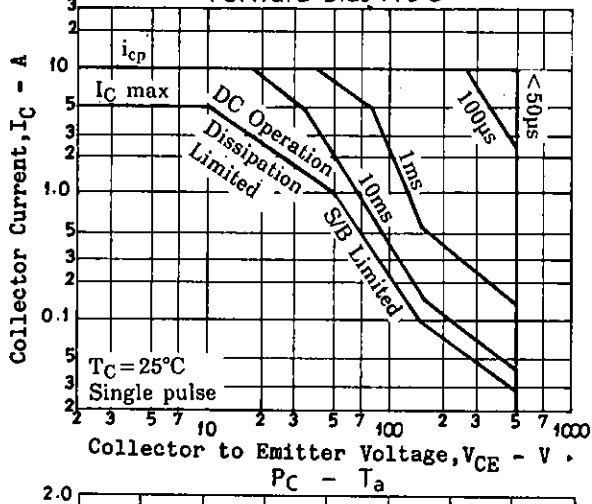
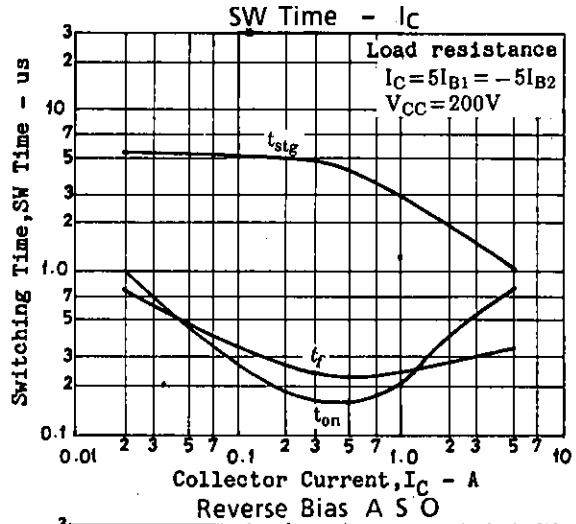
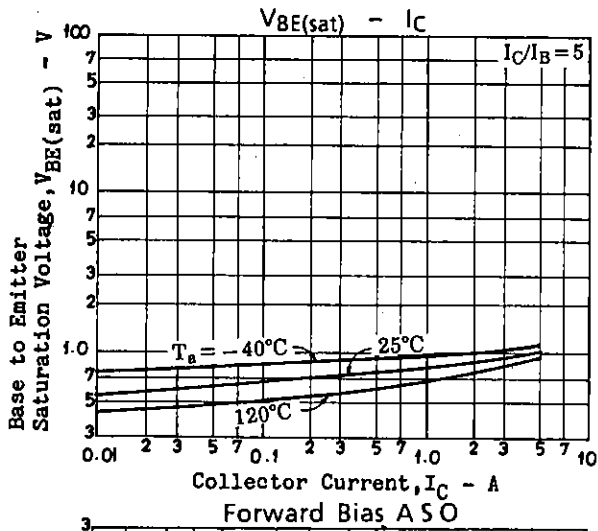
			min	typ	max	unit
C-E Sustain Voltage	$V_{CE0(sus)}$	$I_C=5A, I_B=1.0A$ $L=50\mu H$	500			V
	$V_{CEX(sus)}(1)$	$I_C=5A, I_B=1.0A$ $L=200\mu H, I_{B2}=-1.0A, \text{Clamped}$	500			V
	$V_{CEX(sus)}(2)$	$I_C=1.2A, I_{B1}=0.24A$ $L=200\mu H, I_{B2}=-0.24A, \text{Clamped}$	550			V
Turn-on Time	$t_{on}$	$I_C=4A, I_{B1}=0.8A$ $I_{B2}=-0.8A, R_L=50\text{ohms}$ $V_{CC}=200V$			1.0	$\mu s$
Storage Time	$t_{stg}$				3.0	$\mu s$
Fall Time	$t_f$				1.0	$\mu s$

Switching Time Test Circuit



Unit (resistance:  $\Omega$ , capacitance: F)





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