

**SANYO**

No. 1577B

**2SC3451**

NPN Triple Diffused Planar Silicon Transistor  
FOR SWITCHING REGULATORS

**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 Ta=25°C**

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	800	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	500	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	7	V
Collector Current	I <sub>C</sub>	15	A
Peak Collector Current	i <sub>cp</sub>	PW $\leq$ 300 $\mu$ s, Duty Cycle $\leq$ 10% 25 A	
Base Current	I <sub>B</sub>	4	A
Collector Dissipation	P <sub>C</sub>	T <sub>c</sub> =25°C 100 W	
Junction Temperature	T <sub>j</sub>	150	°C
storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**Electrical Characteristics at Ta=25°C**

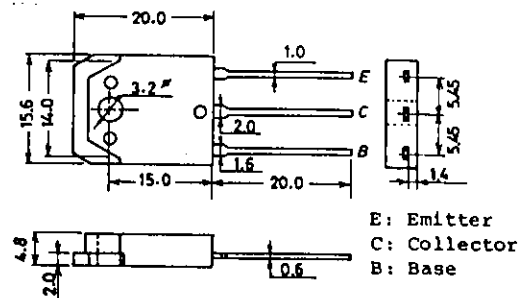
			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =500V, I <sub>E</sub> =0			10	$\mu$ A
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	$\mu$ A
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =5V, I <sub>C</sub> =1.2A	15*		50*	
		V <sub>CE</sub> =5V, I <sub>C</sub> =6A	8			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =1.2A		18		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		160		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =6A, I <sub>B</sub> =1.2A			1.0	V
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =6A, I <sub>B</sub> =1.2A			1.5	V
C-B Breakdown Voltage	V(BR) <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	800			V
C-E Breakdown Voltage	V(BR) <sub>CEO</sub>	I <sub>C</sub> =5mA, R <sub>BE</sub> = $\infty$	500			V
E-B Breakdown Voltage	V(BR) <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V

\*: The h<sub>FE</sub>(1) of the 2SC3451 is classified as follows. When specifying the h<sub>FE</sub>(1) rank, specify two ranks or more in principle

15	L	30	20	M	40	30	N	50
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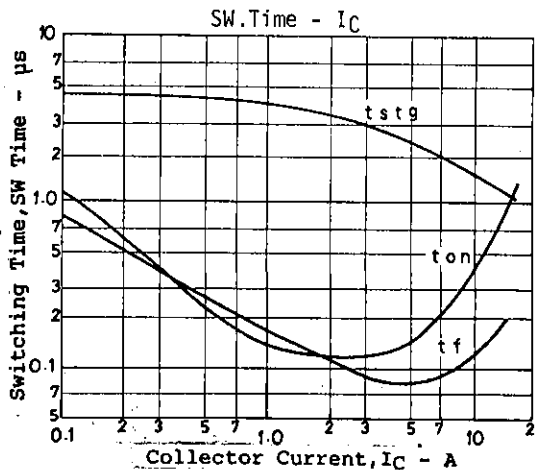
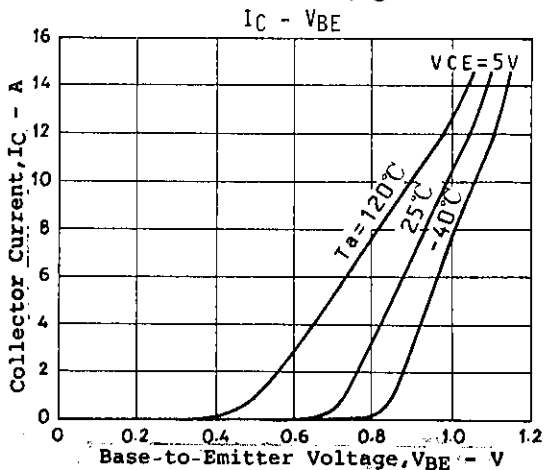
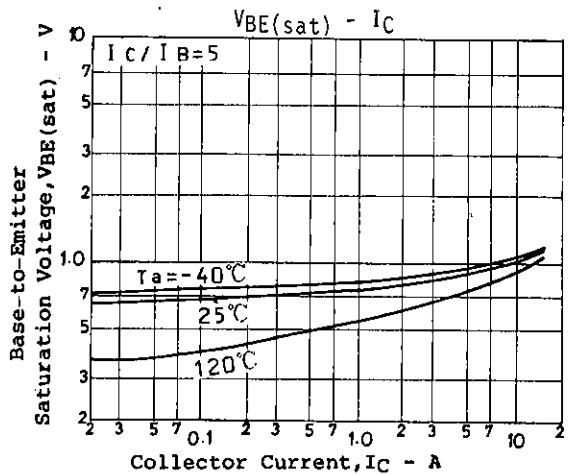
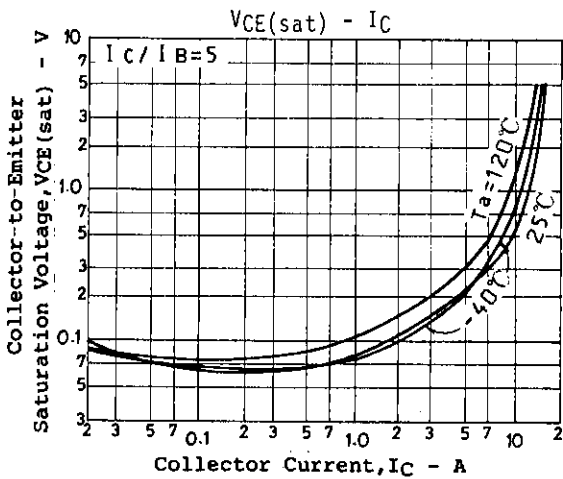
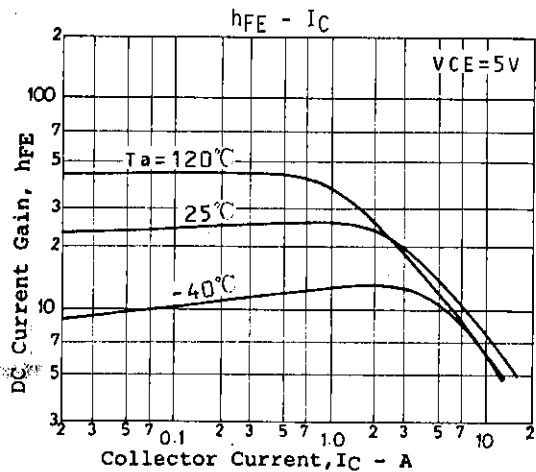
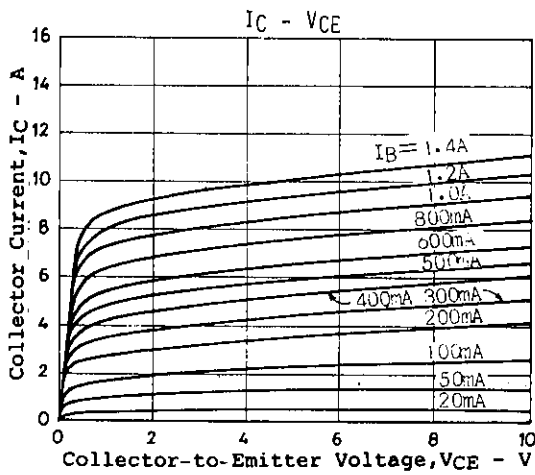
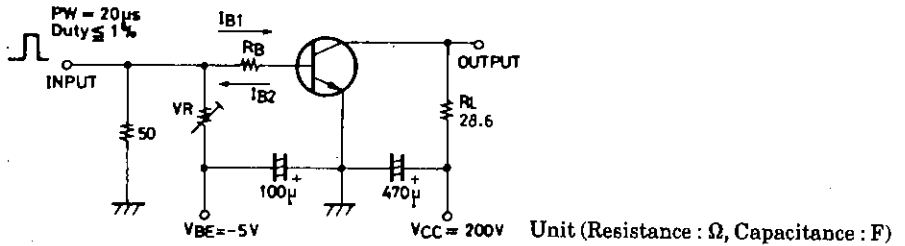
**Package Dimensions 2022**  
(unit:mm)

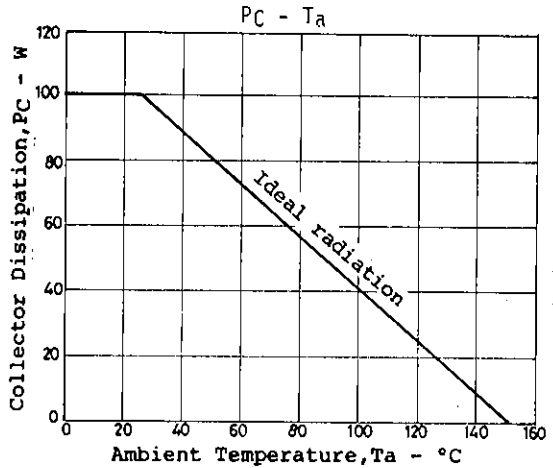
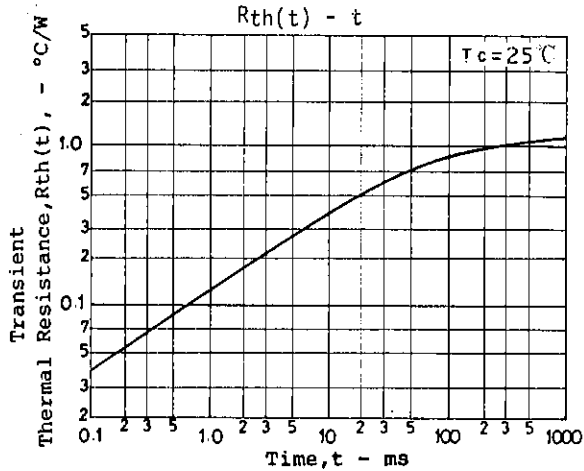
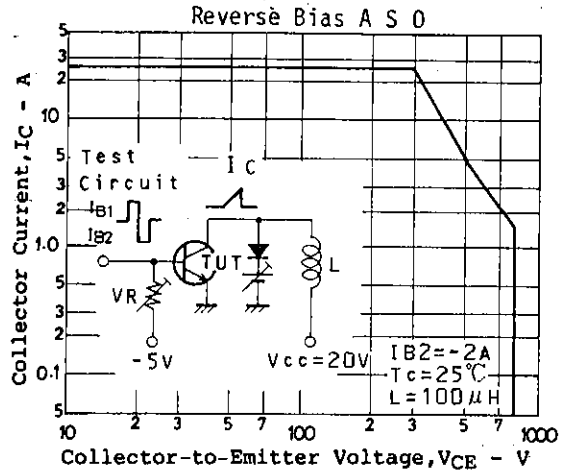
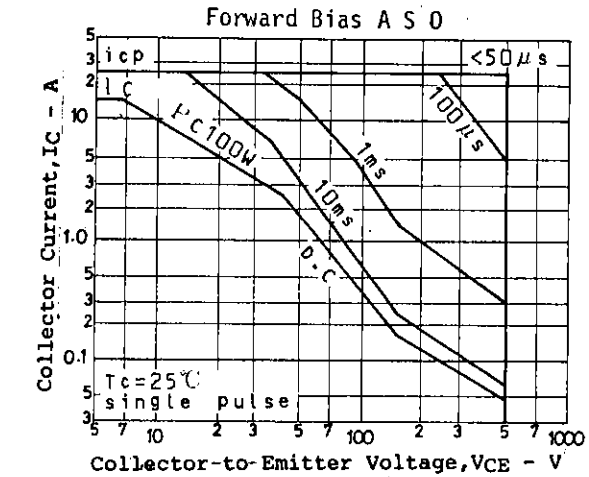


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			min	typ	max	unit
C-E Sustain Voltage	$V_{CE(sus)}$	$I_C=5A,$ $I_{B1}=-I_{B2}=2A,$ $L=500\mu H, \text{clamped}$	500			V
Turn-on Time	$t_{on}$	$V_{CC}=200V,$ $5I_{B1}=-2.5I_{B2}=I_C=7A,$ $R_L=28.6\text{ohms}$			0.5	$\mu s$
Storage Time	$t_{stg}$				3.0	$\mu s$
Fall Time	$t_f$				0.3	$\mu s$

Switching Time Test Circuit





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