

**SANYO**

No. 1971A

**2SC3752**

NPN Triple Diffused Planar Type Silicon Transistor  
SWITCHING REGULATOR APPLICATIONS

**Features**

- . High breakdown voltage and high reliability
- . Fast switching speed
- . Wide ASO
- . Adoption of MBIT process
- . Micaless package facilitating mounting

**Absolute Maximum Ratings at Ta=25°C**

			unit
Collector-to-Base Voltage	V <sub>CBO</sub>	1100	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	800	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	7	V
Collector Current	I <sub>C</sub>	3	A
Peak Collector Current	i <sub>cp</sub>	PW ≤ 300μs, Duty cycle ≤ 10%	
Base Current	I <sub>B</sub>	1.5	A
Collector Dissipation	P <sub>C</sub>	30	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**

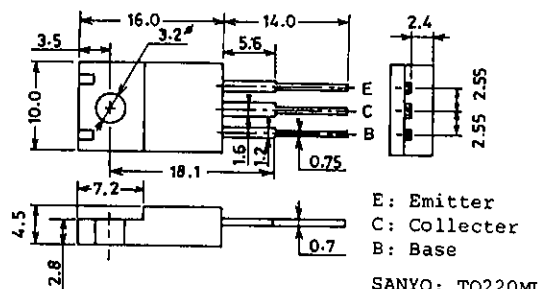
			min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =800V, I <sub>E</sub> =0			10	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =5V, I <sub>C</sub> =0.2A	10*		40*	
		V <sub>CE</sub> =5V, I <sub>C</sub> =1A	8			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.2A		15		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		60		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			2.0	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			1.5	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	1100			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =5mA, R <sub>BE</sub> =∞	800			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V

Continued on next page.

\*: The h<sub>FE</sub>(1) of the 2SC3752 is classified as follows. When specifying the h<sub>FE</sub>(1) rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
----	---	----	----	---	----	----	---	----

**Package Dimensions 2041 (unit:mm)**



Collector-to-Emitter Sustain Voltage

$V_{CEX(sus)}$   $I_C=1.5A$ ,  
 $I_{B1}=-I_{B2}=0.3A$ ,  
 $L=2mH$ , clamped  
 $V_{CC}=400V$ ,  
 $5I_{B1}=-2.5I_{B2}=I_C=2A$ ,  
 $R_L=200ohms$

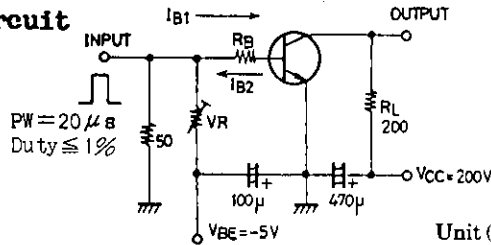
min typ max unit  
 800 V

Turn-on Time  
 Storage Time  
 Fall Time

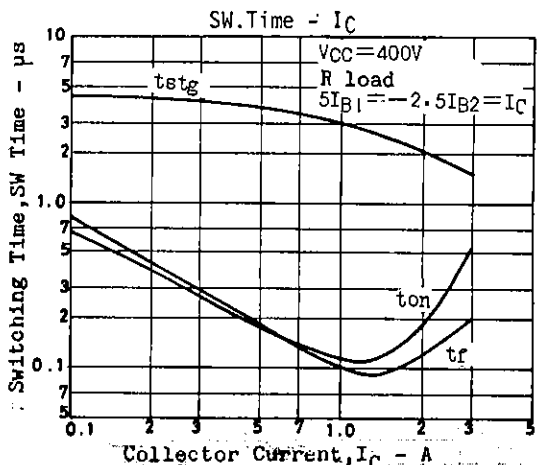
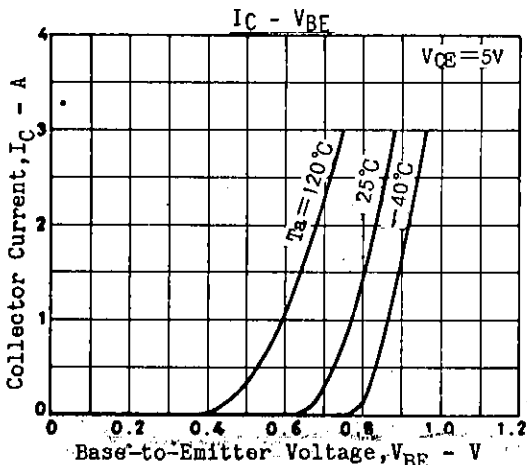
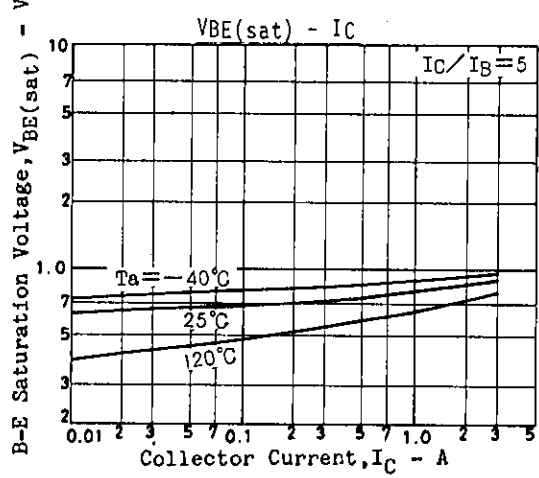
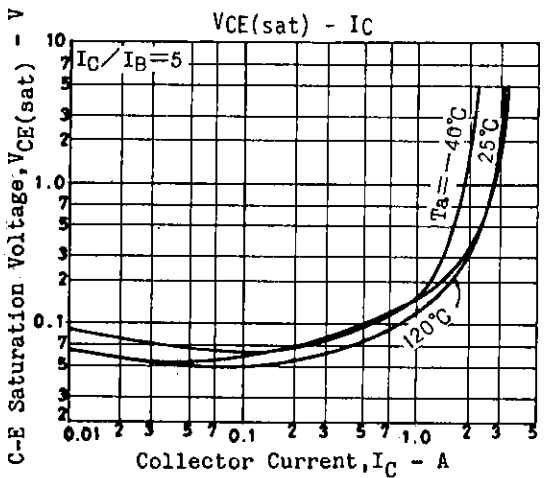
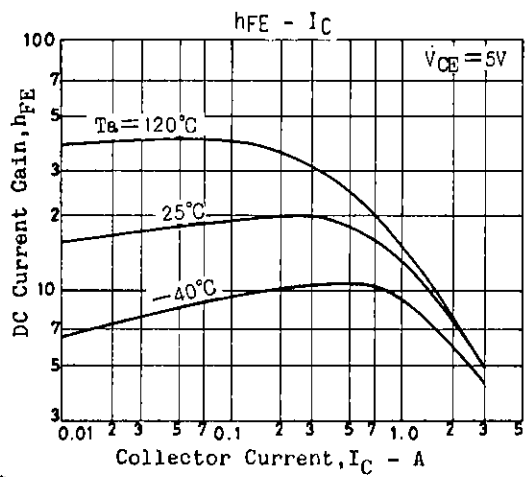
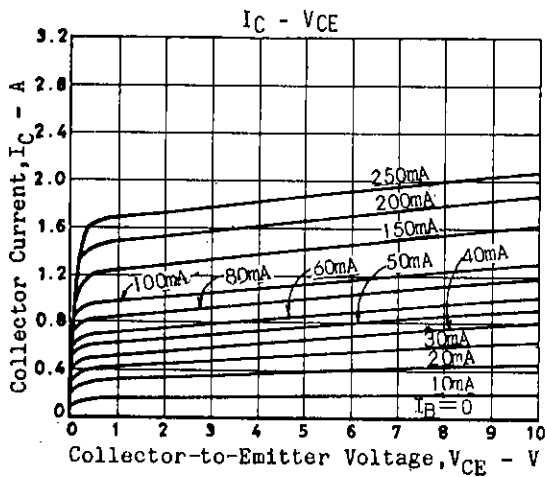
$t_{on}$   
 $t_{stg}$   
 $t_f$

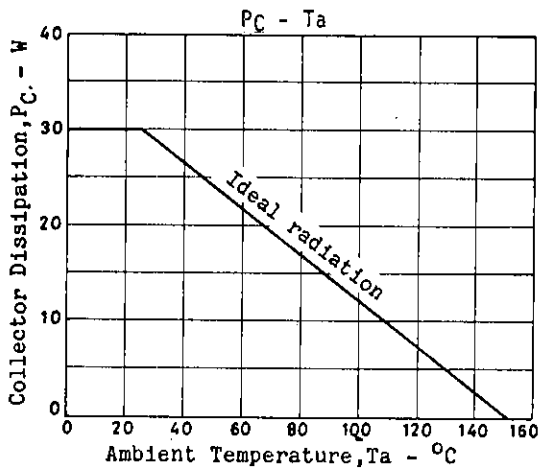
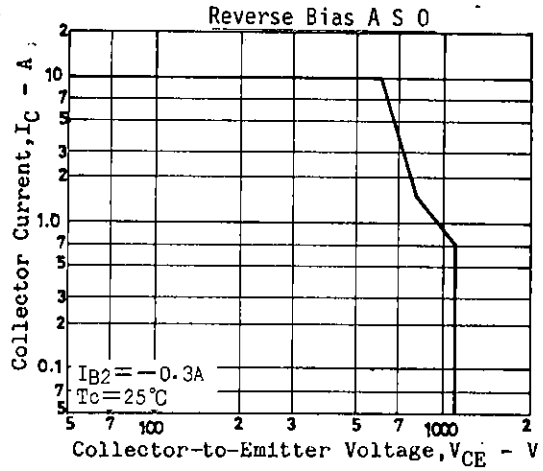
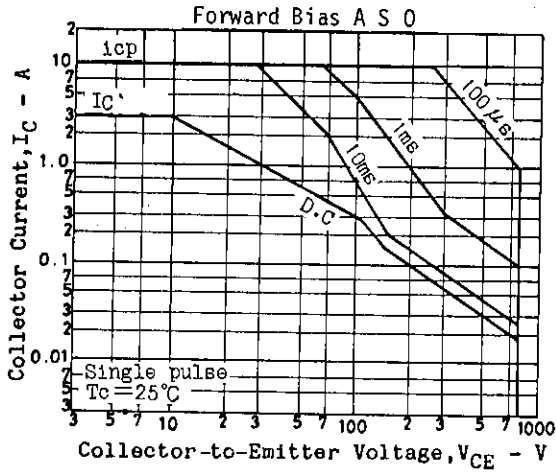
0.5  $\mu s$   
 3.0  $\mu s$   
 0.3  $\mu s$

Switching Time Test Circuit



Unit (Resistance :  $\Omega$ , Capacitance : F)





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.