

NPN Triple Diffused Planar Silicon Transistor

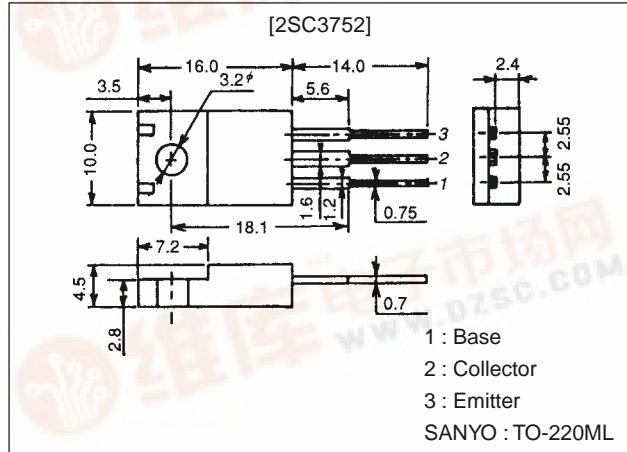
**2SC3752****SANYO****800V/3A Switching Regulator Applications****Features**

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

**Package Dimensions**

unit:mm

2041A

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

Parameter	Symbol	Conditions	Ratings	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
Collector Current (Pulse)	I <sub>CP</sub>	PW≤300μs, Duty Cycle≤10%	10	A
Base Current	I <sub>B</sub>		1.5	A
Collector Dissipation	P <sub>C</sub>	Tc=25°C	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**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.2A	10*		40*	
	h <sub>FE2</sub>	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

\*: The h<sub>FE1</sub> of the 2SC3752 is classified as follows. When specifying the h<sub>FE1</sub> rank, specify two ranks or more in principle.

10 K 20 15 L 30 20 M 40

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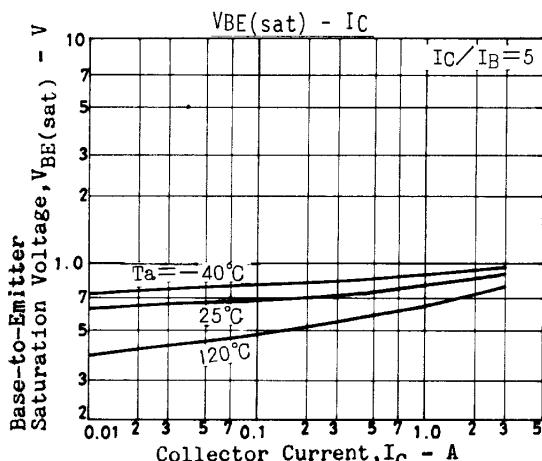
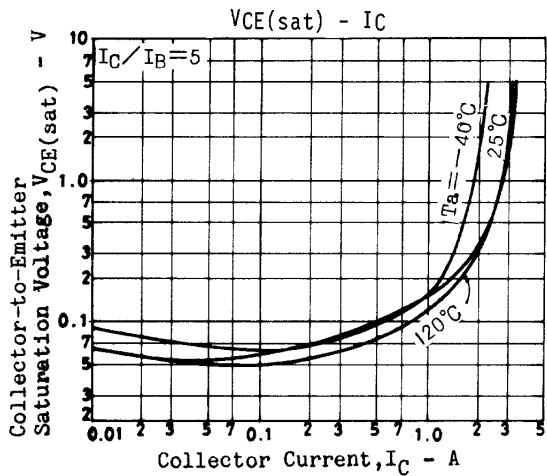
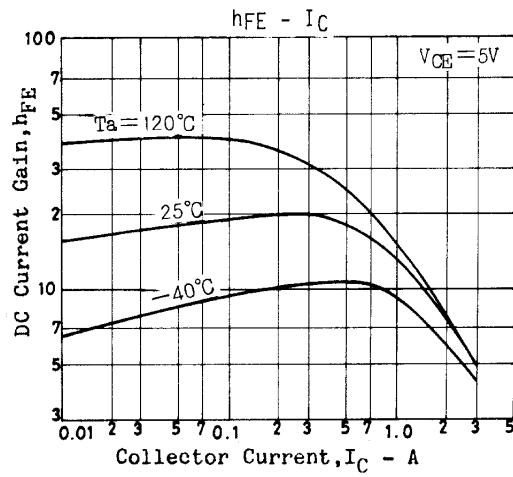
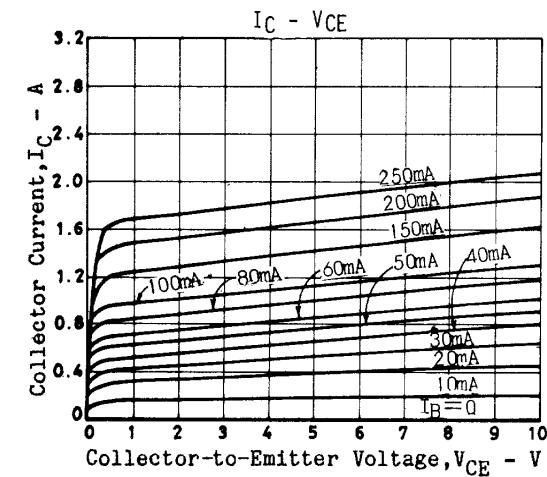
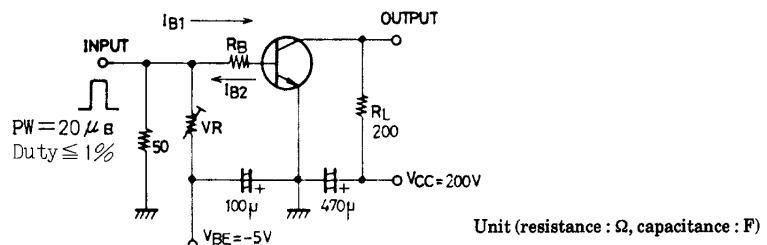
**SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters**

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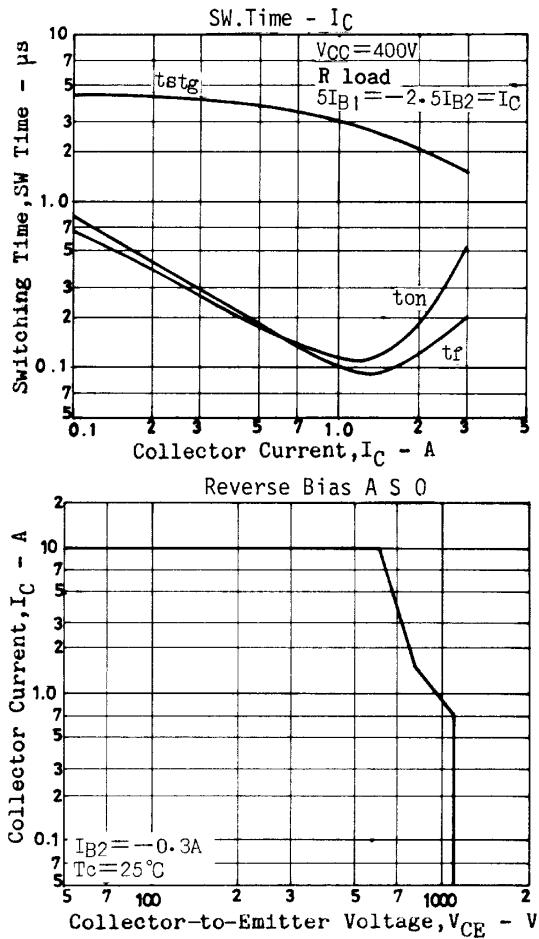
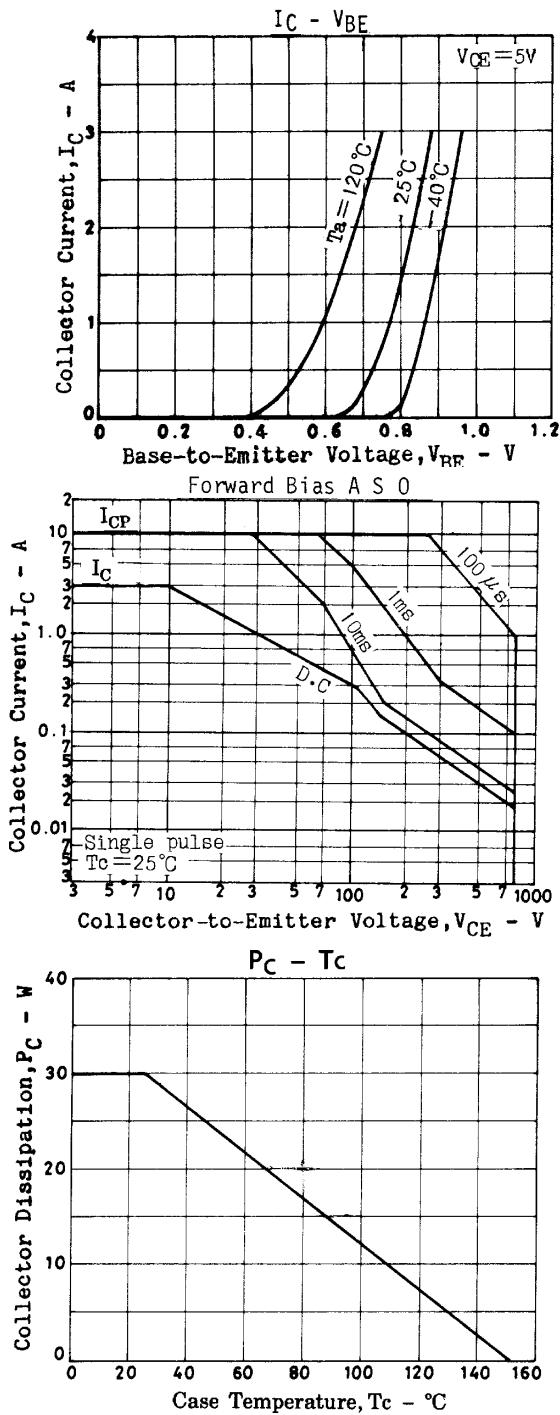
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1.5A, I_B=0.3A$			2.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5A, I_B=0.3A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	1100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEX(sus)}$	$I_C=1.5A, I_{B1}=-I_{B2}=0.3A, L=2mH, \text{Clamped}$	800			V
Turn-ON Time	$t_{on}$	$V_{CC}=400V, 5I_{B1}=-2.5I_{B2}=I_C=2A, R_L=200\Omega$			0.5	$\mu s$
Storage Time	$t_{stg}$	$V_{CC}=400V, 5I_{B1}=-2.5I_{B2}=I_C=2A, R_L=200\Omega$			3.0	$\mu s$
Fall Time	$t_f$	$V_{CC}=400V, 5I_{B1}=-2.5I_{B2}=I_C=2A, R_L=200\Omega$			0.3	$\mu s$

## Switching Time Test Circuit



## 2SC3752



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