Ordering number:EN1971A

NPN Triple Diffused Planar Silicon Transistor

2SC3752

800V/3A Switching Regulator Applications

Features

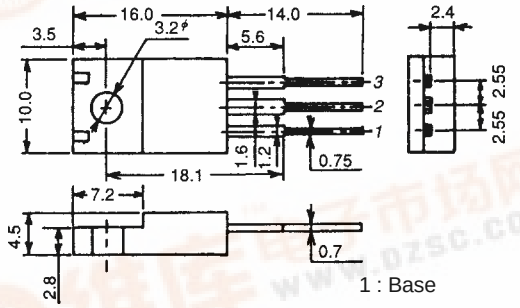
- High breakdown voltage and high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.
- Micaless package facilitating mounting.

Package Dimensions

unit:mm

2041A

[2SC3752]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO-220ML

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		1100	V
Collector-to-Emitter Voltage	V_{CEO}		800	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}	PW≤300μs, Duty Cycle≤10%	10	A
Base Current	I_B		1.5	A
Collector Dissipation	P_C	Tc=25˚C	30	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=800V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			10	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=0.2A	10*		40*	
	$h_{FE}2$	V_{CE}=5V, I_C=1A	8			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=0.2A		15		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		60		pF

* : The $h_{FE}1$ of the 2SC3752 is classified as follows. When specifying the $h_{FE}1$ rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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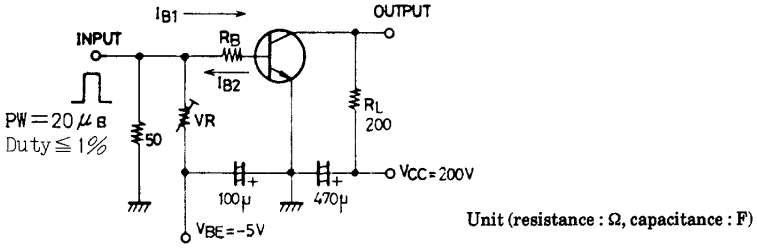
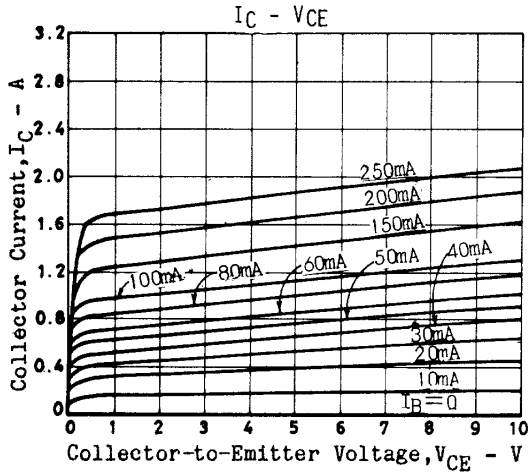
2SC3752

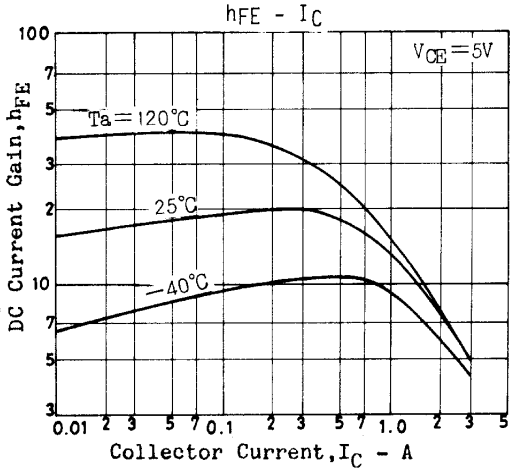
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1.5A, I_B=0.3A			2.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=1.5A, I_B=0.3A			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	1100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, R_{BE}=∞	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, Clamped	800			V
Turn-ON Time	t_{on}	V_{CC}=400V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=200Ω			0.5	μs
Storage Time	t_{stg}	V_{CC}=400V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=200Ω			3.0	μs
Fall Time	t_f	V_{CC}=400V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=200Ω			0.3	μs

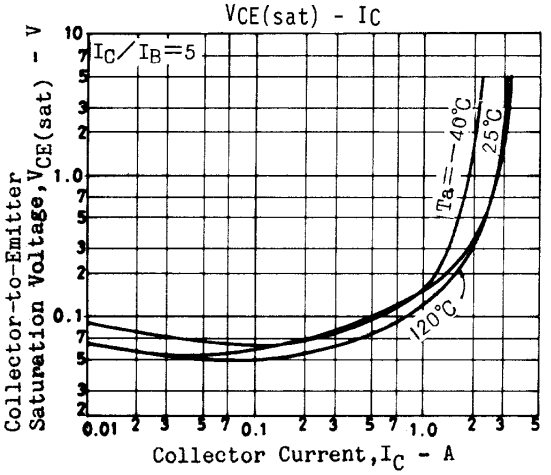
Switching Time Test Circuit

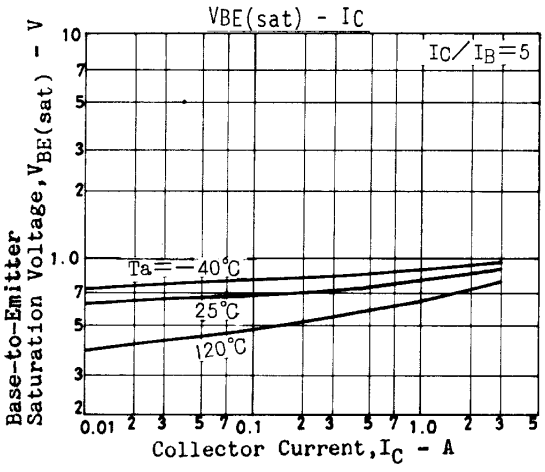


Unit (resistance : Ω, capacitance : F)

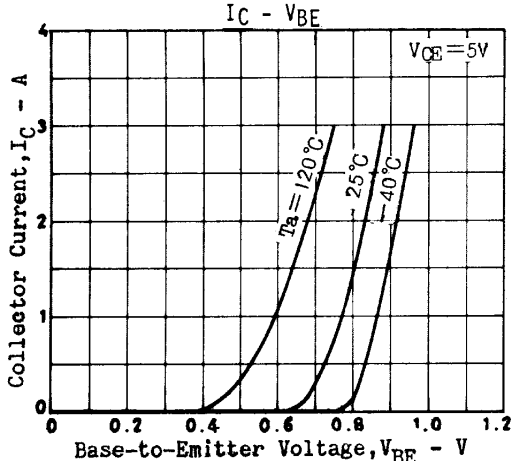




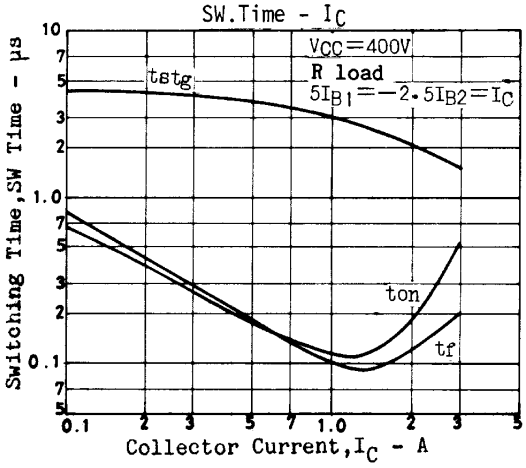




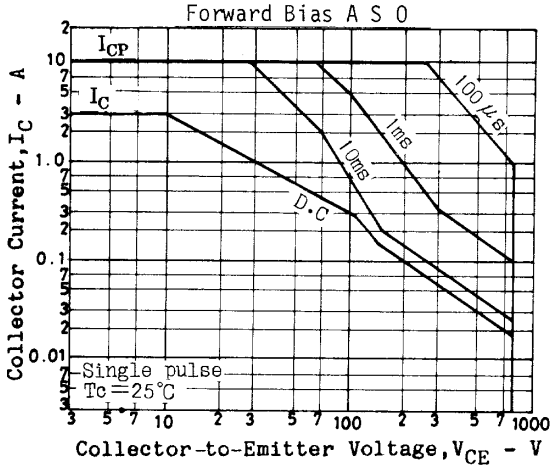
I_C - V_{BE}



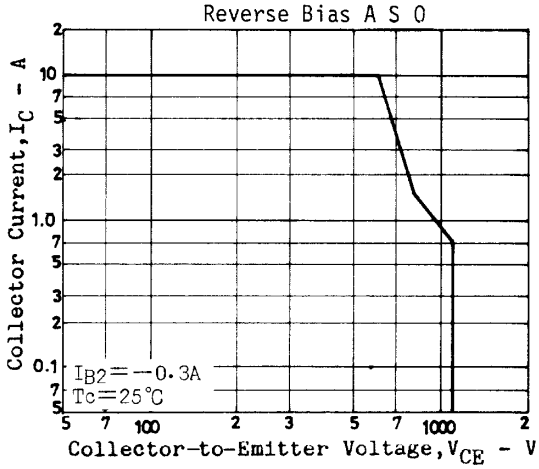
SW.Time - I_C



Forward Bias A S O



Reverse Bias A S O



P_C - Tc