Ordering number:EN1544B

NPN Triple Diffused Planar Silicon Transistor

2SC3446

500V/3A Switching Regulator Applications

Features

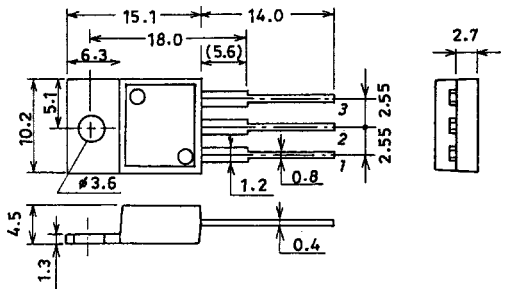
- High breakdown voltage and high reliability.
- Fast switching speed (t_f : 0.1μs typ).
- Wide ASO.
- Adoption of MBIT process.

Package Dimensions

unit:mm

2010C

[2SC3446]



JEDEC : TO-220AB
EIAJ : SC-46

1 : Base
2 : Collector
3 : Emitter

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	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		3	A
Collector Current (Pulse)	I_{CP}	PW≤300μs, Duty Cycle≤10%	6	A
Base Current	I_B		1	A
Collector Dissipation	P_C	Tc=25˚C	40	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}=500V, 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=0.3A	15*			
	$h_{FE}2$	V_{CE}=5V, I_C=1.5A	8			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=0.3A		18		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		50		pF

* : The $h_{FE}1$ of the 2SC3446 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

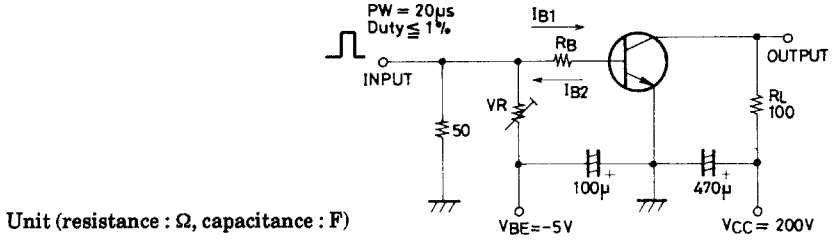
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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications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

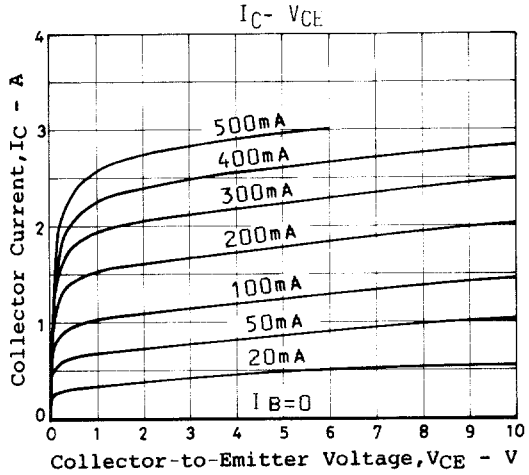
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

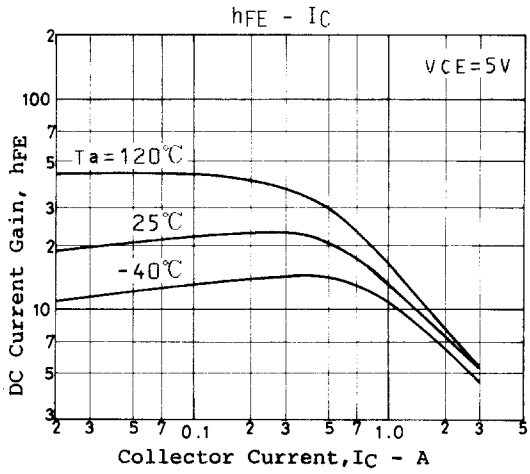
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1.5A, I_B=0.3A			1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=1.5A, I_B=0.3A			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	800			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, R_{BE}=∞	500			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}=0.6A, L=2mH, clamped	500			V
Turn-ON Time	t_{on}	V_{CC}=200V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=100Ω			0.5	μs
Storage Time	t_{stg}	V_{CC}=200V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=100Ω			3.0	μs
Fall Time	t_f	V_{CC}=200V, 5I_{B1}=–2.5I_{B2}=I_C=2A, R_L=100Ω			0.3	μs

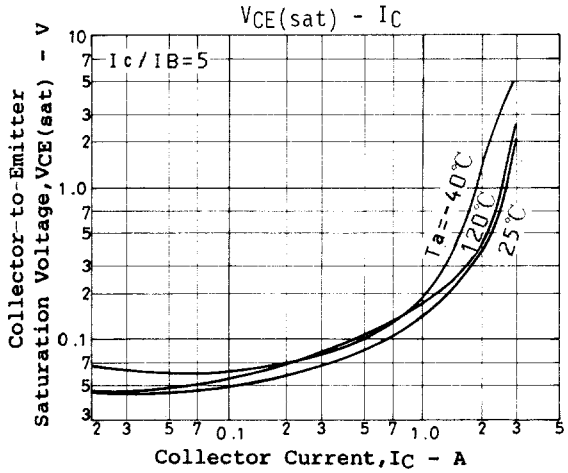
Switching Time Test Circuit

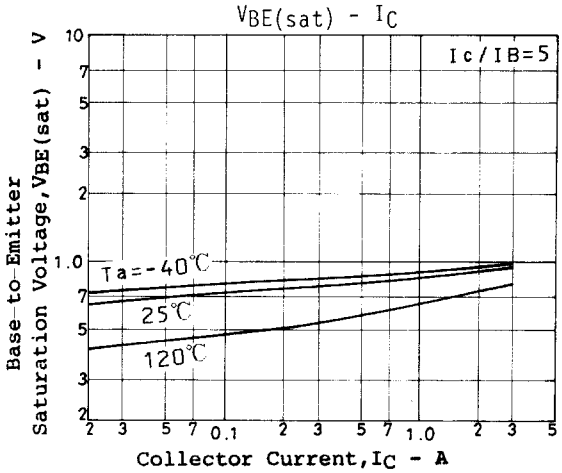


Unit (resistance : Ω, capacitance : F)

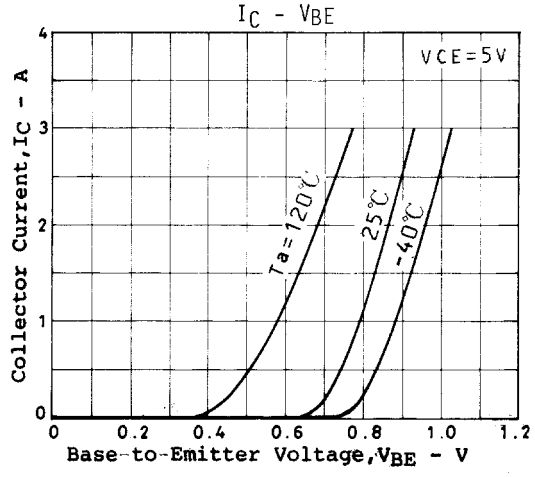




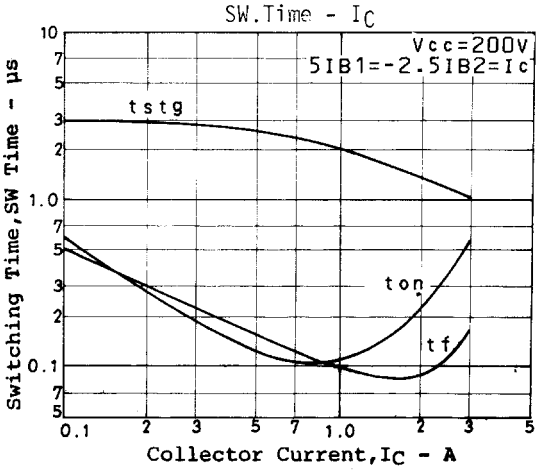




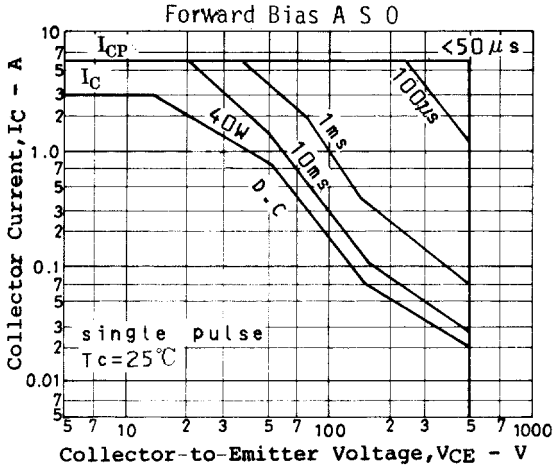
I_C - V_{BE}



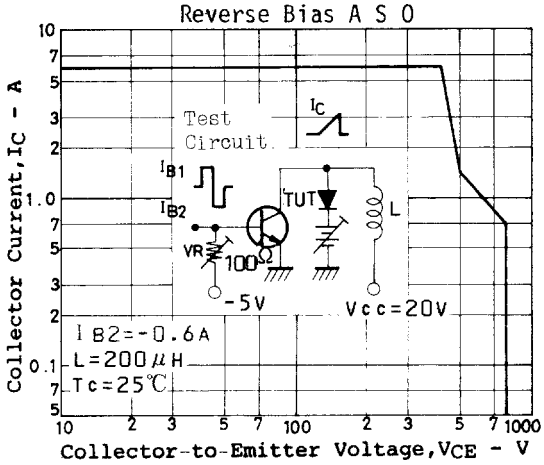
SW.Time - I_C



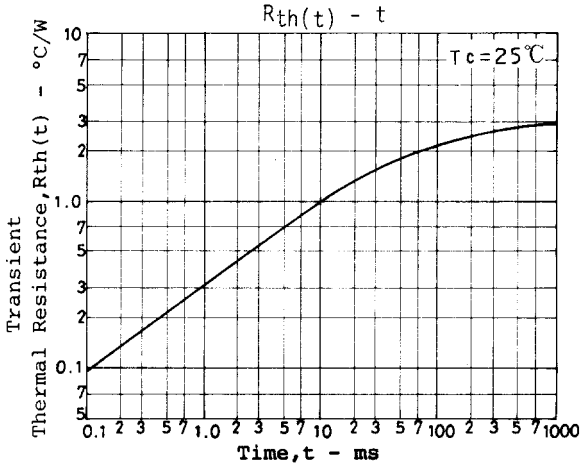
Forward Bias A S O



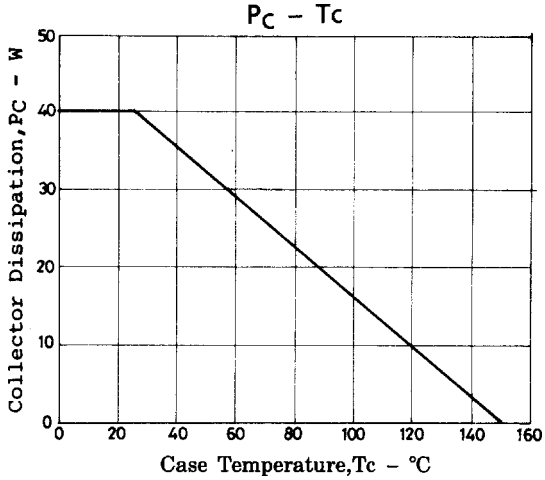
Reverse Bias A S O



$R_{th(t)}$ - t



P_C - Tc



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