Ordering number: EN 2547A

SANYO

No.2547A

2SC4171

NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

- High breakdown voltage ($V_{CBO} \geqq 800V$)
- Fast switching speed
- Wide ASO
- Suitable for sets whose height is restricted

Absolute Maximum Ratings at Ta=25°C

				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
Peak Collector Current	i_{cp}	PW≦300μs, Duty Cycle≦10%	6	A
Base Current	I_B		1	A
Collector Dissipation	P_C		1.65	W
		Tc=25°C	40	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

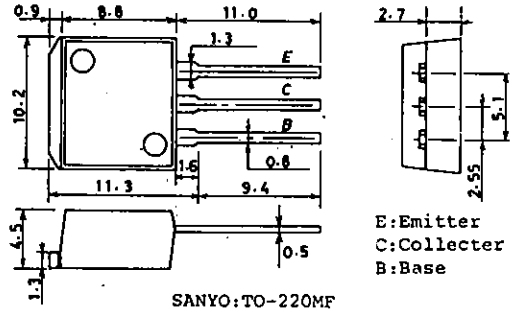
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=500V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			10	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=5V, I_C=0.3A	15*		50*	
	$h_{FE(2)}$	V_{CE}=5V, I_C=1.5A	8			
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=1.5A, I_B=0.3A			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=1.5A, I_B=0.3A			1.5	V
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=0.3A		18		MHz
Output Capacitance	c_{ob}	V_{CB}=10V, f=1MHz		40		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	800			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	500			V
B-E Breakdown Voltage	$V_{(BR)BEO}$	I_E=1mA, I_C=0	7			V

Continued on next page.

*: The $h_{FE(1)}$ of the 2SC4171 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

Package Dimensions 2049
(unit: mm)



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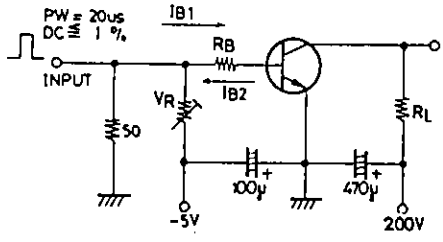
SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10,1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

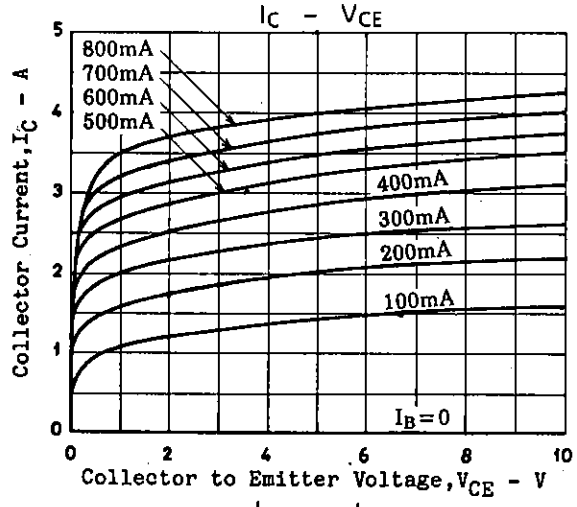
Continued from preceding page.

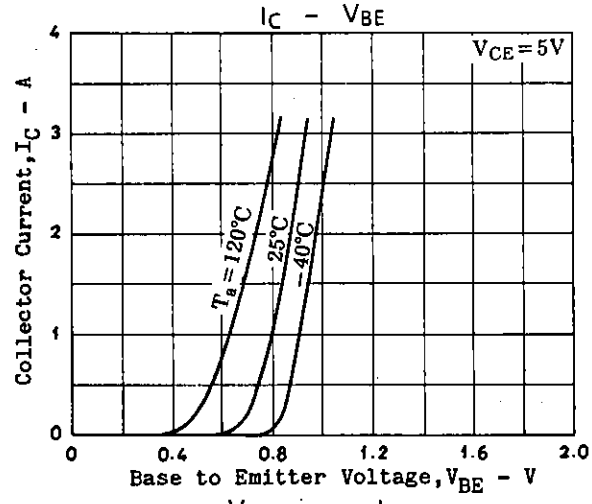
			min	typ	max	unit
C-E Sustain Voltage	$V_{CEO(sus)}$	I_C=3A,I_B=0.6A L=50μH	500			V
	$V_{CEX(sus)(1)}$	I_C=3A,I_{B1}=0.6A L=200μH,I_{B2}=-0.6A,Clamped	500			V
	$V_{CEX(sus)(2)}$	I_C=0.6A,I_{B1}=0.12A L=200μH,I_{B2}=-0.12A,Clamped	550			V
Turn-on Time	t_{on}	I_C=2A,I_{B1}=0.4A I_{B2}=-0.4A,RL=100ohms V_{CC}=200V			1.0	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				1.0	μs

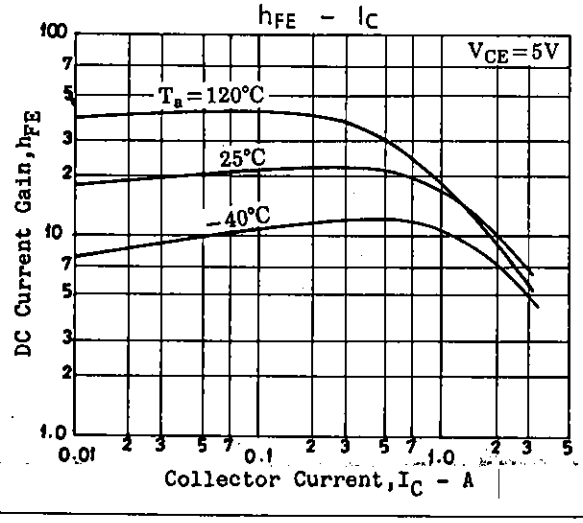
Switching Time Test Circuit

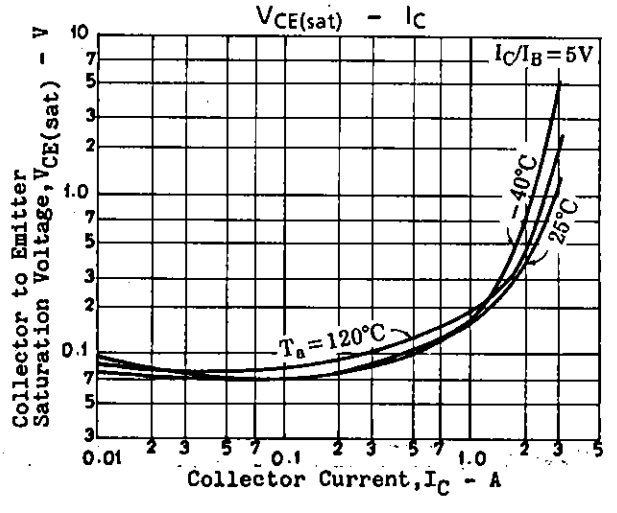


Unit (resistance: Ω, capacitance: F)

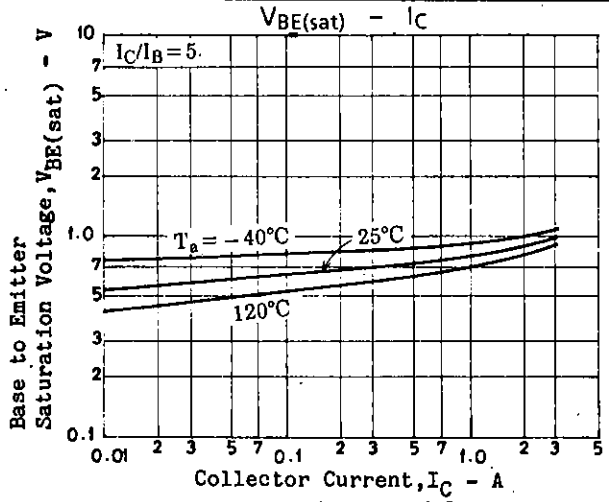




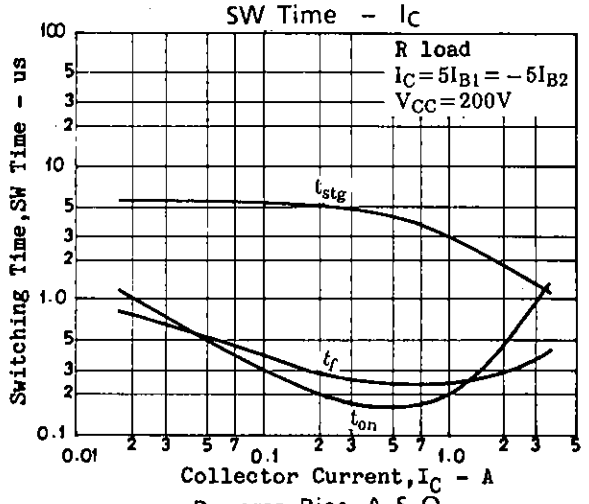




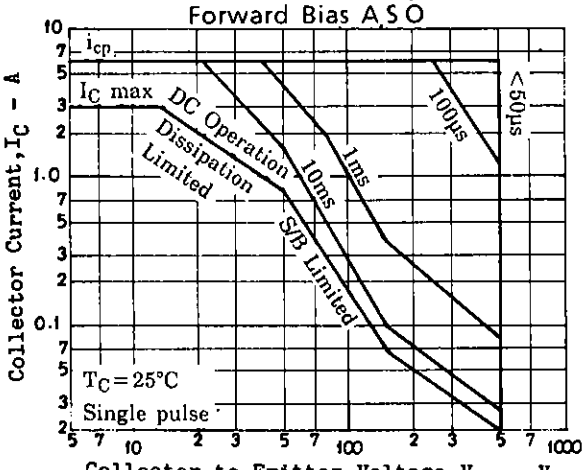
$V_{BE(sat)}$ – I_C



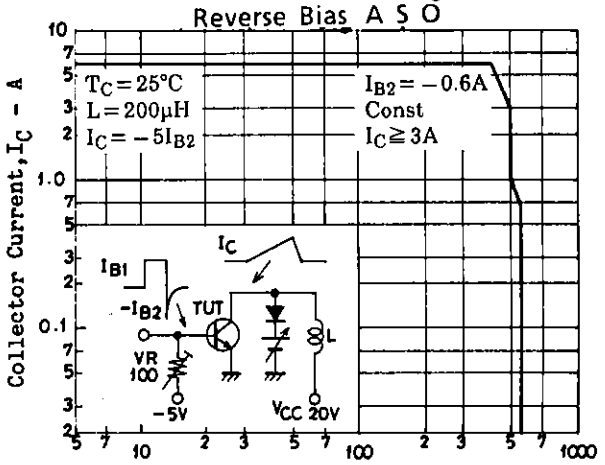
SW Time – I_C



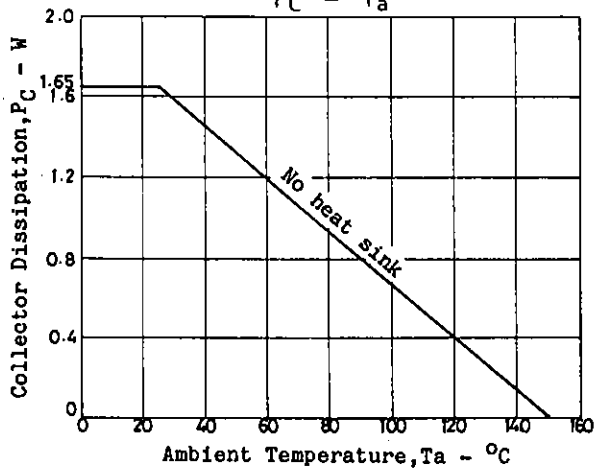
Forward Bias A S O



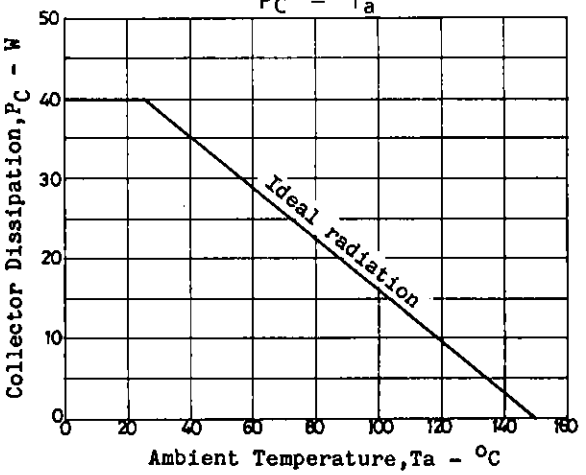
Reverse Bias A S O



P_C – T_a



P_C – T_a



$R_{th(t)}$ – t