Ordering number :EN1013C

SANYO

No.1013C

2SC3090

NPN Triple Diffused Planar Silicon Transistor

For Switching Regulators

Features

- High breakdown voltage($V_{CBO} \geqq 800V$).
- Fast switching speed.
- Wide ASO.

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		10	A
Peak Collector Current	i_{cp}	PW≦300μs Duty cycle≦10%	20	A
Base Current	I_B		4	W
Collector Dissipation	P_C		2.5	W
		Tc=25°C	100	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

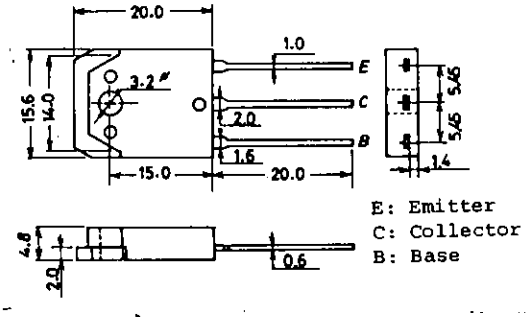
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=500V,I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V,I_C=0			10	μA
DC Current Gain	$h_{FE}(1)$	V_{CE}=5V,I_C=1.2A	15*		50*	
	$h_{FE}(2)$	V_{CE}=5V,I_C=6A	8			
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=6A,I_B=1.2A			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=6A,I_B=1.2A			1.5	V
Gain-Bandwidth Product	f_T	V_{CE}=10V,I_C=1.2A		18		MHz
Output Capacitance	C_{ob}	V_{CB}=10V,f=1MHz		160		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=5mA,R_{BE}=∞	500			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA,I_C=0	7			V
C-E Sustain Voltage	$V_{CEO(sus)}$	I_C=10A,I_B=2A,L=50μH	500			V
C-E Sustain Voltage	$V_{CEX(sus)}$ (1)	I_C=10A,I_{B1}=2A,L=200μH, I_{B2}=-2A,clamped	500			V
C-E Sustain Voltage	$V_{CEX(sus)}$ (2)	I_C=2.4A,I_{B1}=0.48A,L=200μH,I_{B2}=-0.48A,clamped	550			V

*: The $h_{FE(1)}$ of the 2SC3090 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			

Continued on next page.

Package Dimensions 2022
(unit:mm)

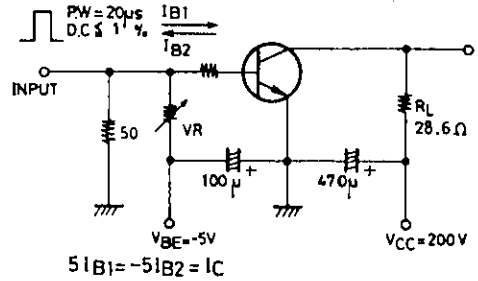


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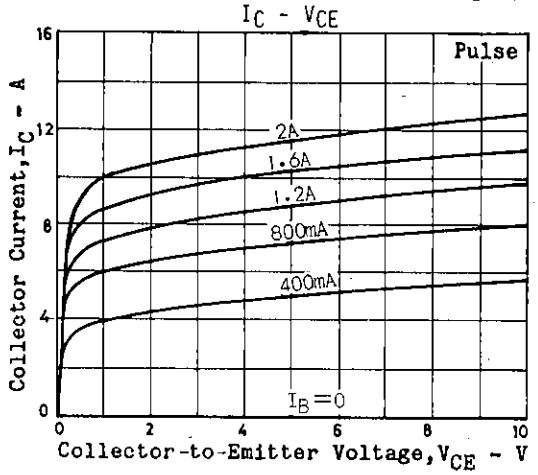
			min	typ	max	unit
Turn-ON Time	t_{on}	I_C=7A, I_{B1}=0.14A, I_{B2}=-1.4A; R_L=28.6ohms, V_{CC}=200V			1.0	μs
Storage Time	t_{stg}	" "			3.0	μs
Fall Time	t_f	" "			1.0	μs

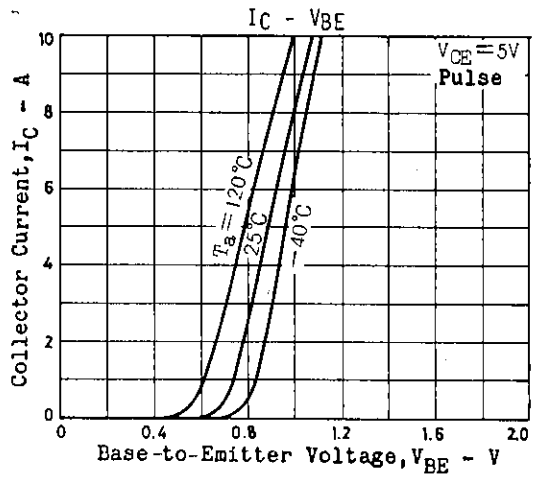
Switching Time Test Circuit

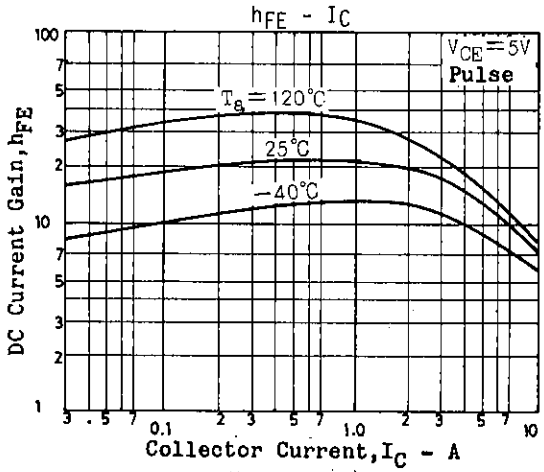


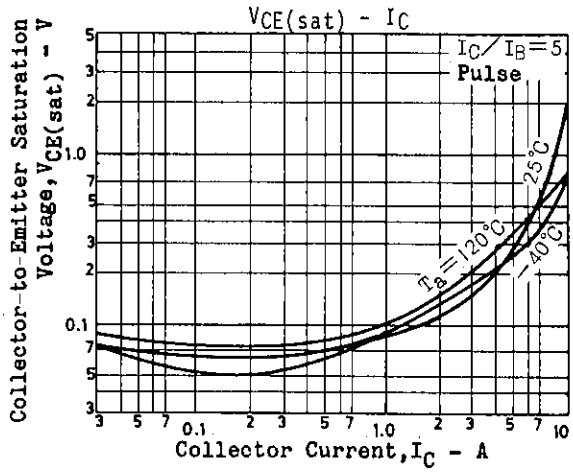
$5I_{B1}=-5I_{B2}=I_C$

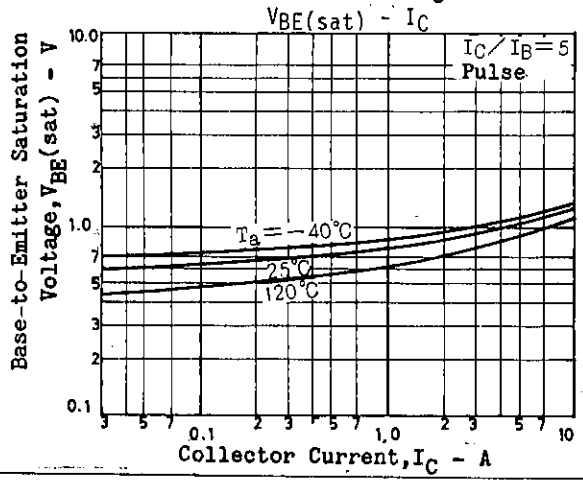
Unit (Resistance : Ω, Capacitance : F)

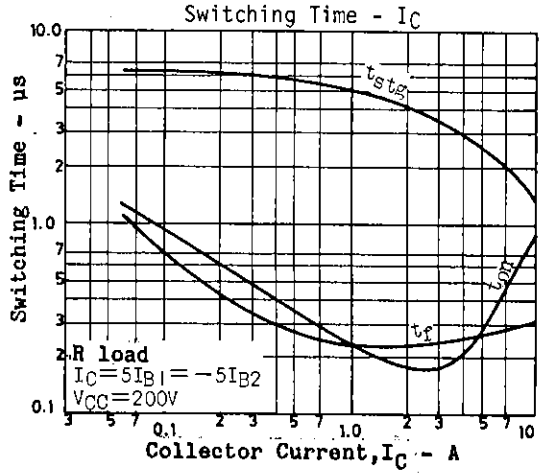




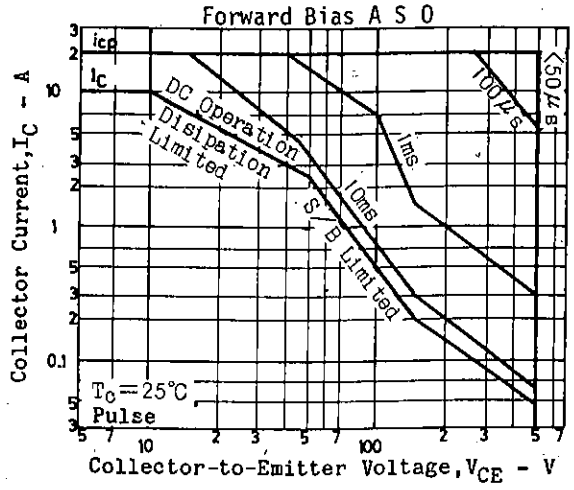




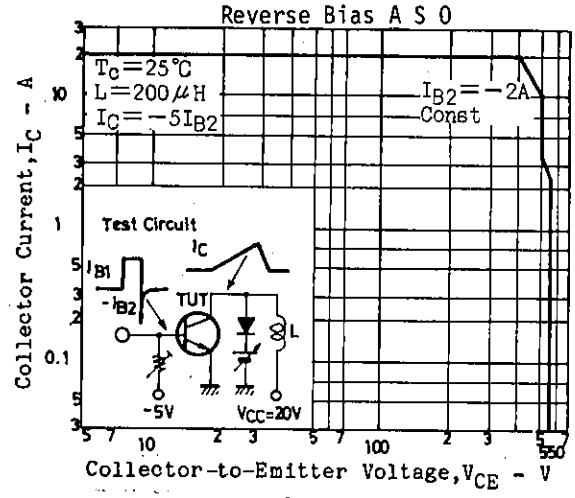




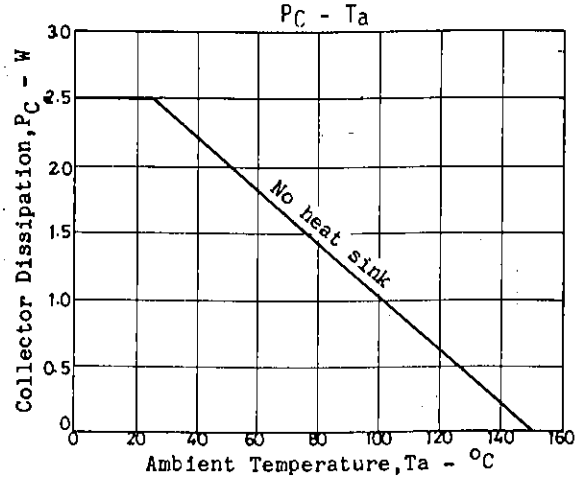
Forward Bias A S O



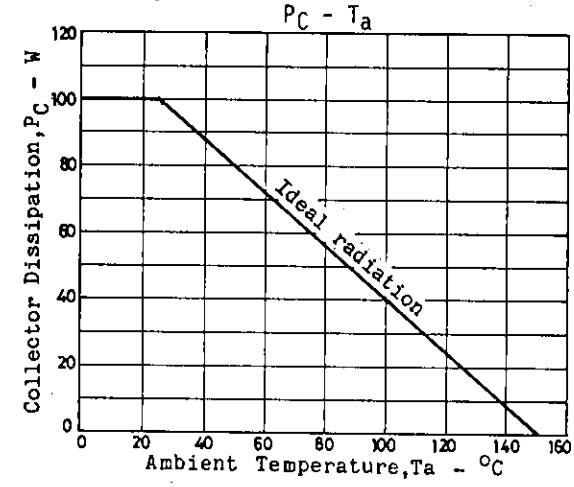
Reverse Bias A S O



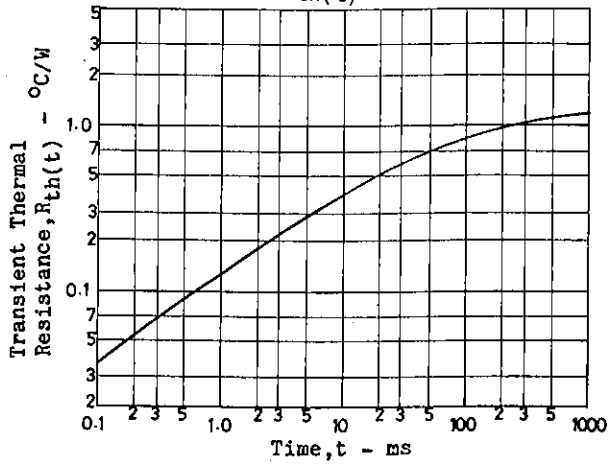
P_C - T_a



P_C - T_a



$R_{th}(t)$ - t



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