

SANYO

No.1013C

2SC3090

NPN Triple Diffused Planar Silicon Transistor

For Switching Regulators

Features

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

Absolute Maximum Ratings at $T_a = 25^\circ C$

			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}	$PW \leq 300\mu s$ Duty cycle $\leq 10\%$	20 A
Base Current	I_B	4	W
Collector Dissipation	P_C	2.5	W
		$T_c = 25^\circ C$	
Junction Temperature	T_j	100	$^\circ C$
Storage Temperature	T_{stg}	150	$^\circ C$
		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

			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	$V_{(BR)CEO}$	$I_C = 5mA, R_{BE} = \infty$		500		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$		7		V
C-E Sustain Voltage	$V_{CEO(sus)}$	$I_C = 10A, I_B = 2A, L = 50\mu H$		500		V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 10A, I_{B1} = 2A, L = 200\mu H$		500		V
	(1)	$I_{B2} = -2A, \text{clamped}$				
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 2.4A, I_{B1} = 0.48A, L = 200\mu H$		550		V
	(2)	$I_{B2} = -0.48A, \text{clamped}$				

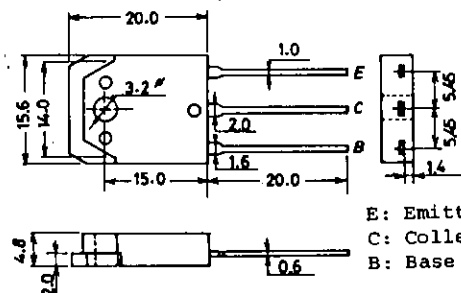
*: The $h_{FE}(1)$ of the 2SC3090 is classified as follows. When specifying the $h_{FE}(1)$ rank, specify two ranks or more in principle.

15	L	30	20	M	40
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30	N	50
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Package Dimensions 2022

(unit: mm)



E: Emitter
C: Collector
B: Base

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SANYO Electric Co., Ltd. Semiconductor Business Headquarters

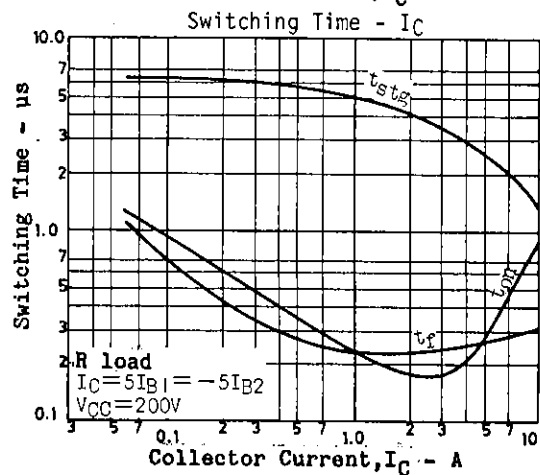
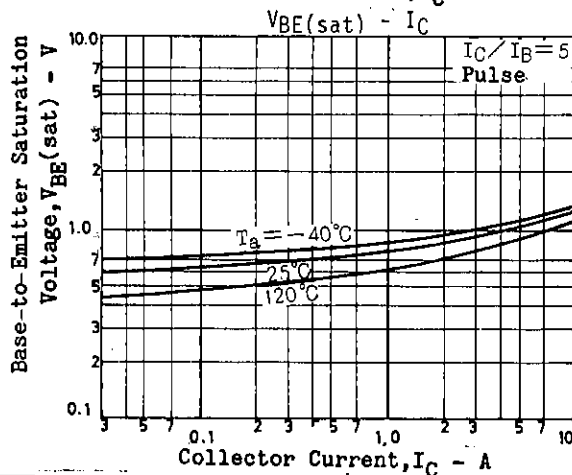
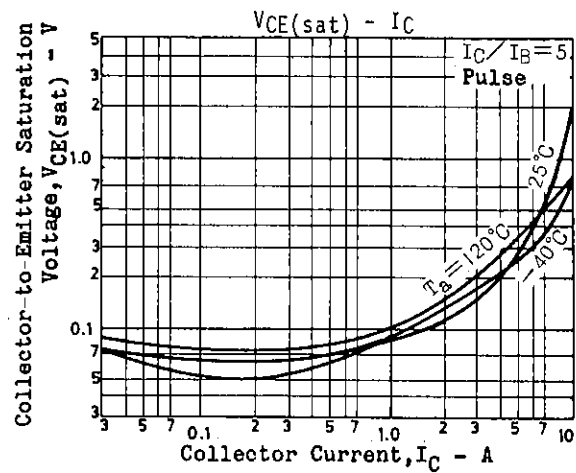
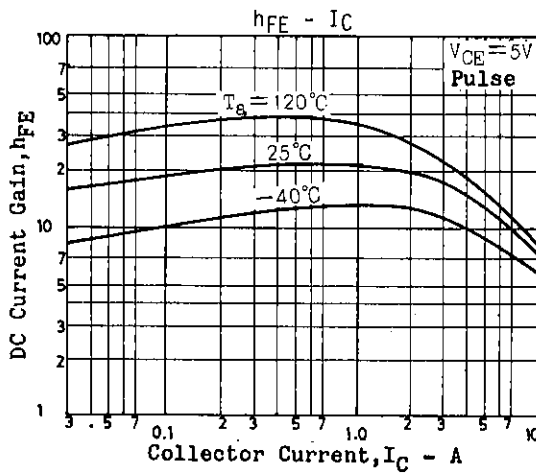
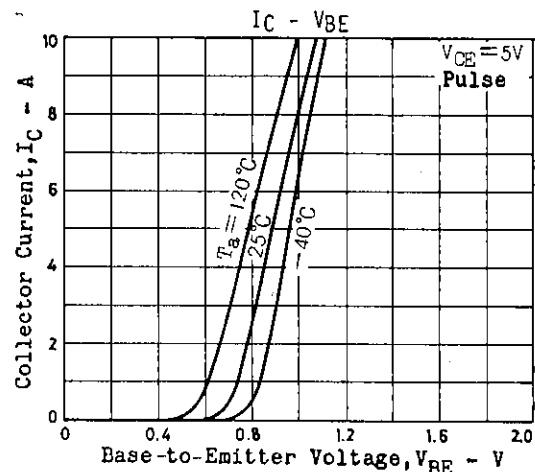
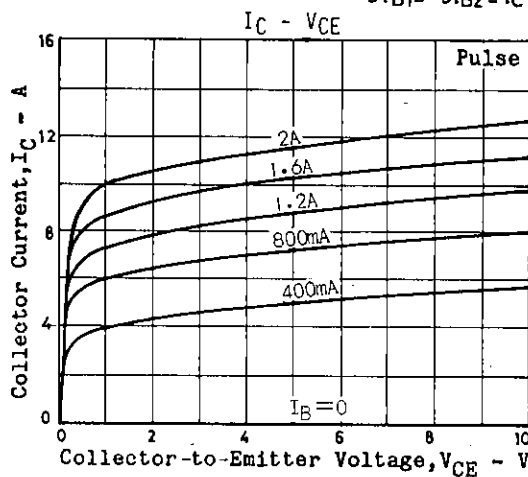
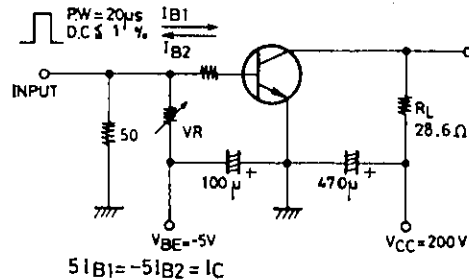
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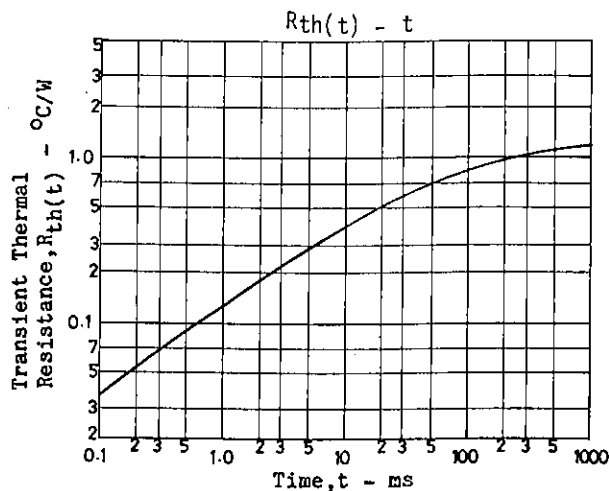
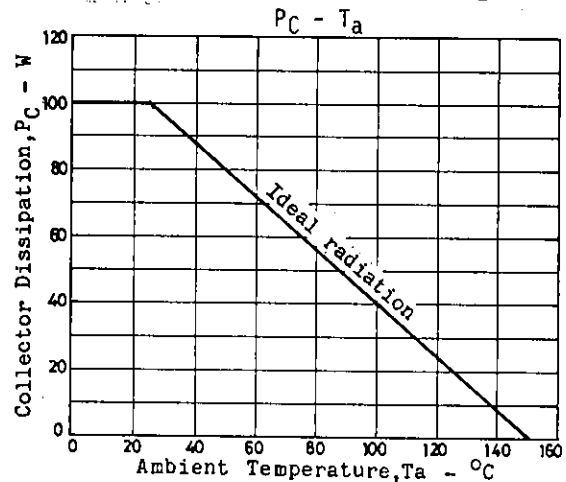
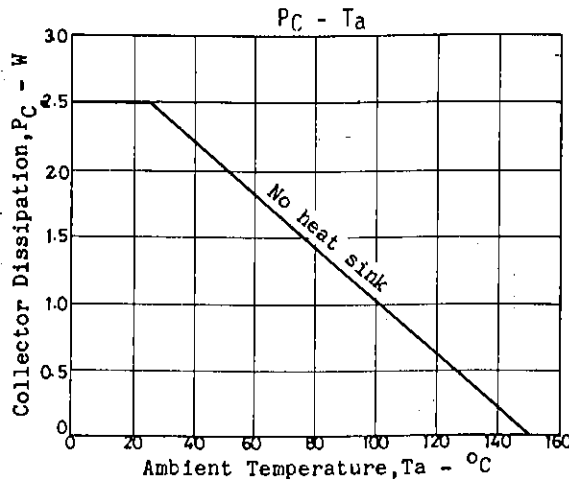
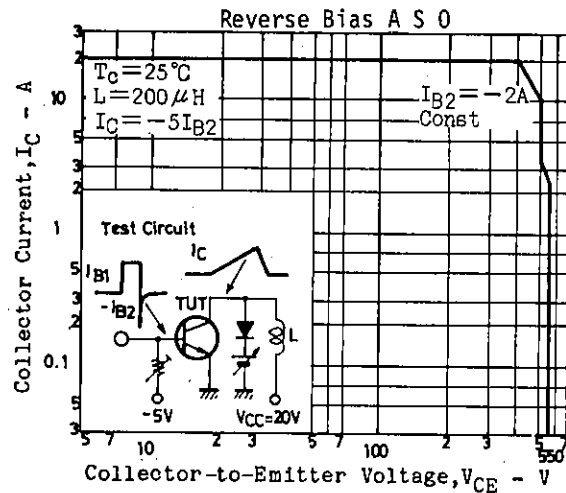
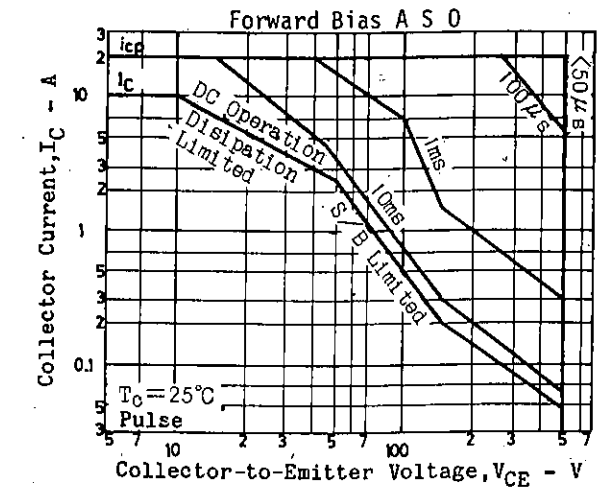
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Turn-ON Time	t_{on}	$I_C=7A, I_{B1}=0.14A, I_{B2}=-1.4A;$ $R_L=28.6\Omega, V_{CC}=200V$	min	typ	max	unit
Storage Time	t_{stg}	"	"	"	3.0	μs
Fall Time	t_f	"	"	"	1.0	μs

Switching Time Test Circuit





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