

SANYO

No.938B

2SC3042

NPN Triple Diffused Planar Silicon Transistor
FOR SWITCHING REGULATORS

Features

- High breakdown voltage ($V_{CBO} \geq 500V$)
- Fast switching speed.
- Wide ASO.

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

Parameter	Symbol	Value	unit
Collector-to-Base Voltage	V_{CBO}	500	V
Collector-to-Emitter Voltage	V_{CEO}	400	V
Emitter-to-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	12	A
Peak Collector Current	i_{cp}	25	A
PW \leq 300 μ s, Duty Cycle \leq 10%			
Base Current	I_B	4	A
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 $T_a=25^\circ C$

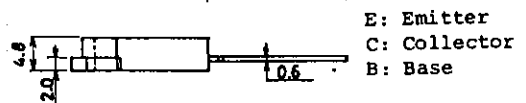
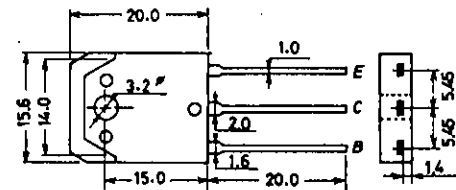
Parameter	Symbol	Test Conditions	min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=400V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5V, I_C=1.6A$	15*		50*	
	$h_{FE}(2)$	$V_{CE}=5V, I_C=8A$	8			
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=8A, I_B=1.6A$			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=8A, I_B=1.6A$			1.5	V
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=1.6A$		20		MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1MHz$		160		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, R_{BE}=\infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V
C-E Sustain Voltage	$V_{CEO(sus)}$	$I_C=12A, I_B=2.4A, L=50\mu H$	400			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=12A, I_{B1}=2.4A, L=200\mu H,$ $I_{B2}=-2.4A, \text{clamped}$	400			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=3A, I_{B1}=0.6A, L=200\mu H,$ $I_{B2}=-0.6A, \text{clamped}$	450			V

*: The $h_{FE}(1)$ of the 2SC3042 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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Package Dimensions 2022
(unit:mm)

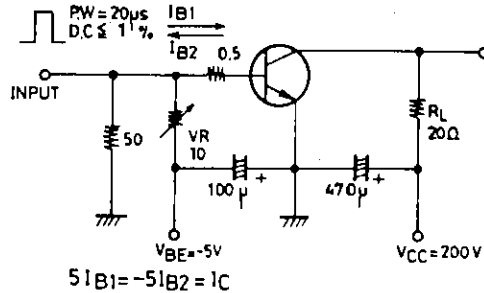


E: Emitter
C: Collector
B: Base

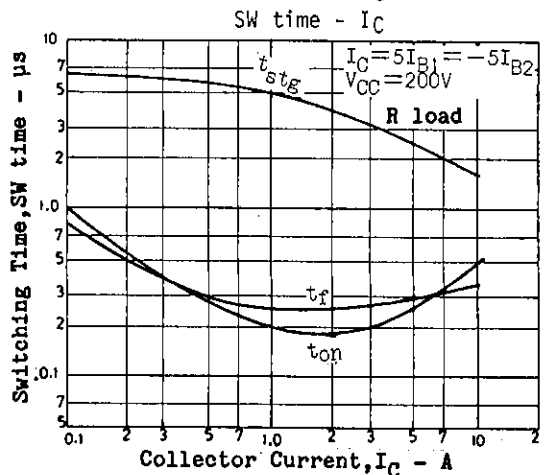
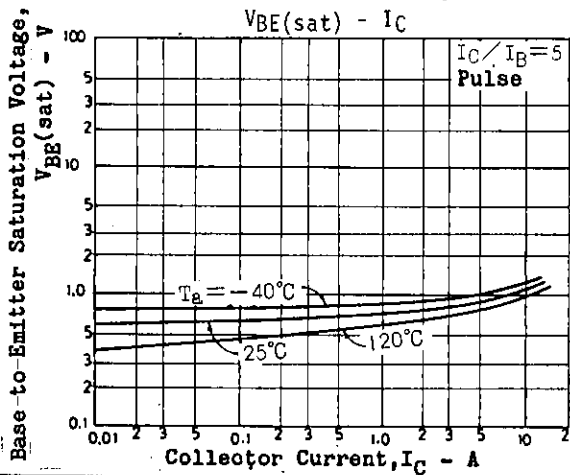
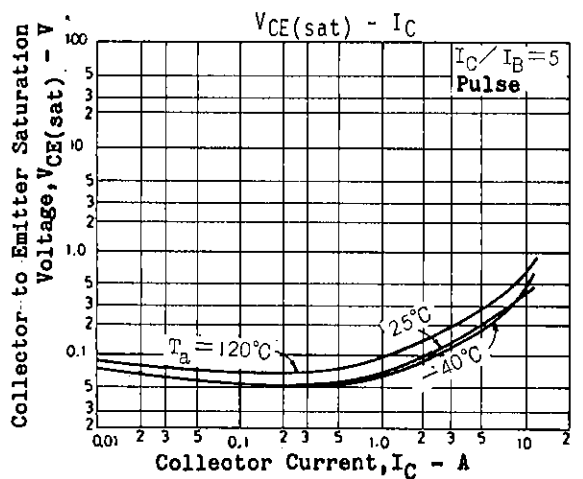
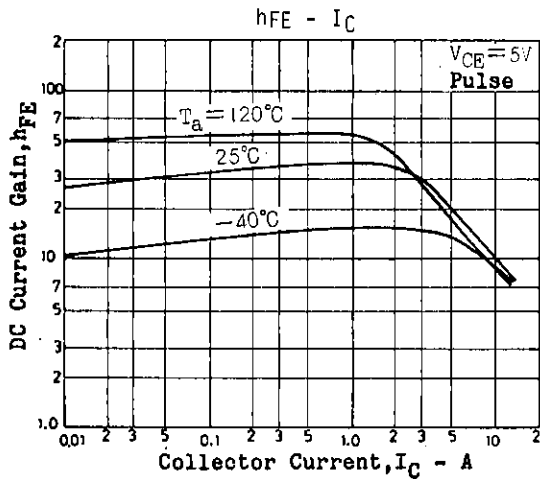
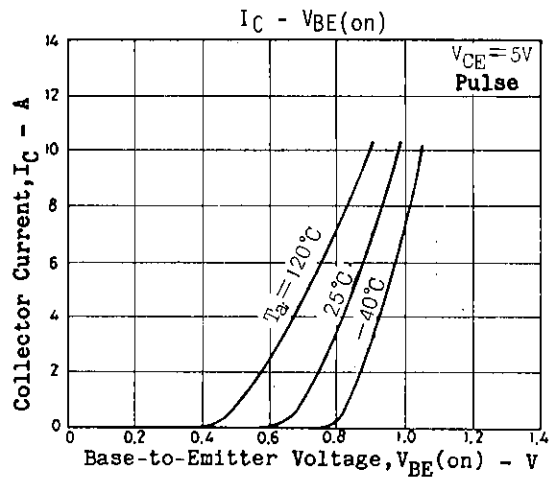
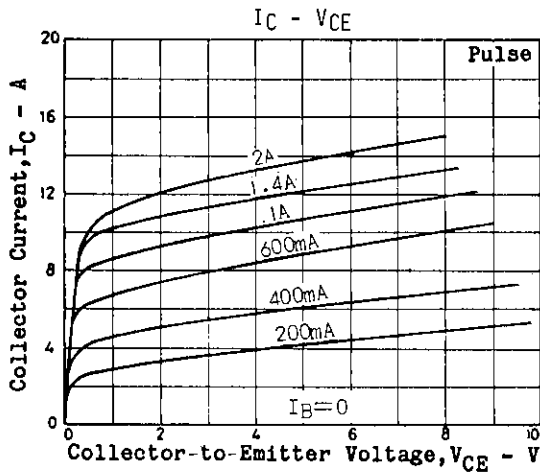
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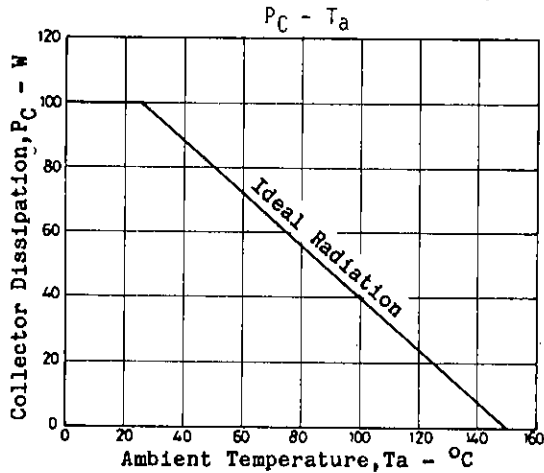
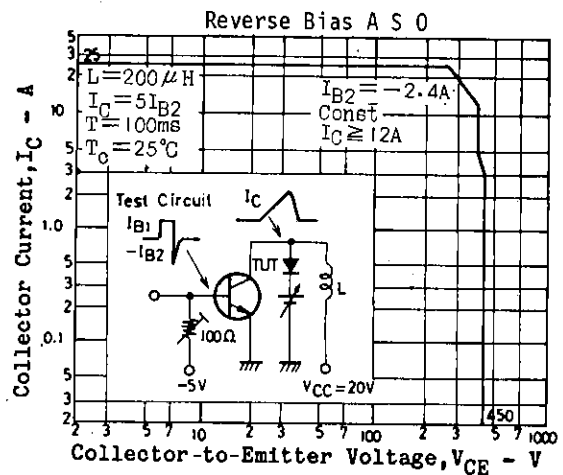
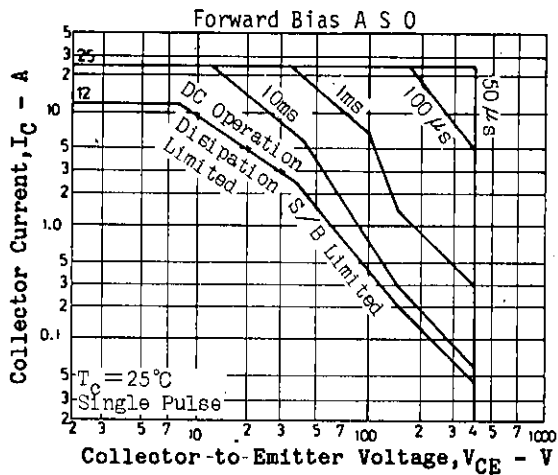
			min	typ	max	unit
Turn-ON Time	t_{on}	$I_C=10A, I_{B1}=2A, I_{B2}=-2A,$ $R_L=20ohms, V_{CC}=200V$			1.0	μs
Storage Time	t_{stg}	" "			2.5	μs
Fall Time	t_f	" "			1.0	μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)





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