

SANYO

No.938B

2SC3042NPN 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 $T_a = 25^\circ C$

			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
		$PW \leq 300\mu s$, 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	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

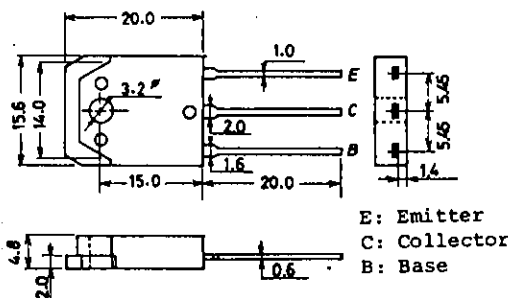
Electrical Characteristics at $T_a = 25^\circ C$

			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	$V_{CEX(sus)}$	$I_C = 12A, I_{B1} = 2.4A, L = 200\mu H$, $I_{B2} = -2.4A$, clamped	400			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 3A, I_{B1} = 0.6A, L = 200\mu H$, $I_{B2} = -0.6A$, 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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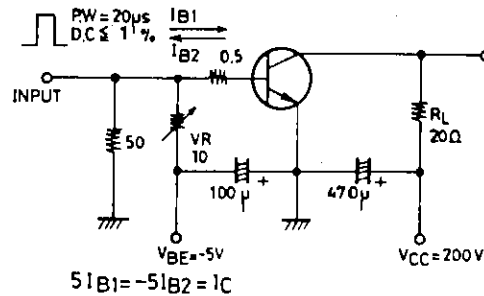
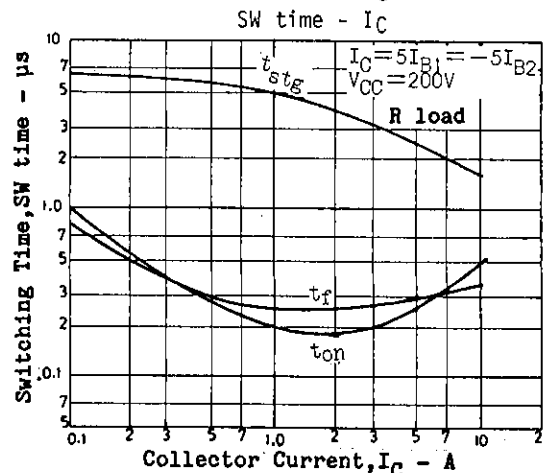
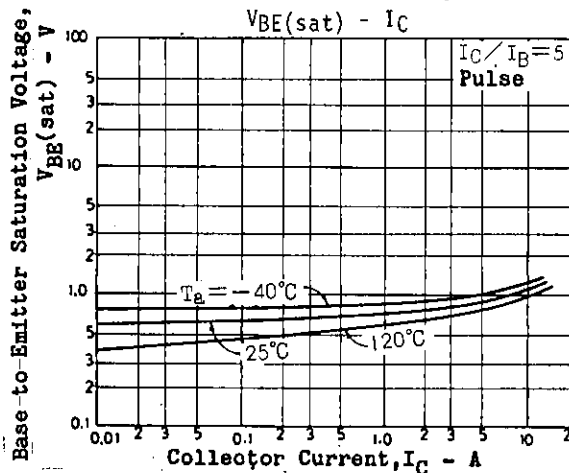
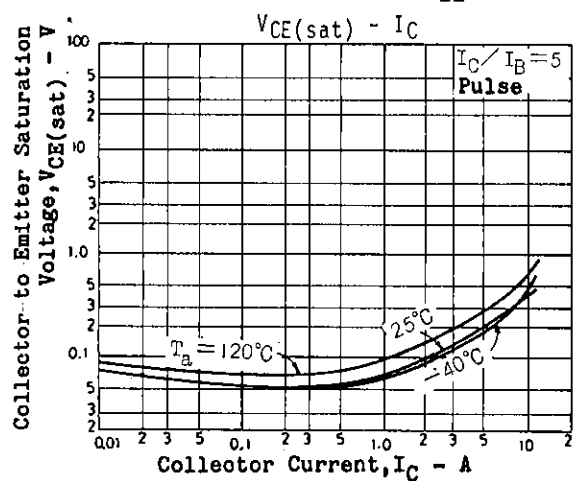
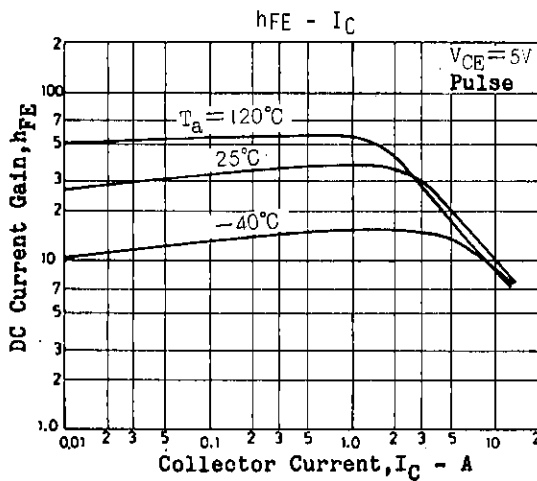
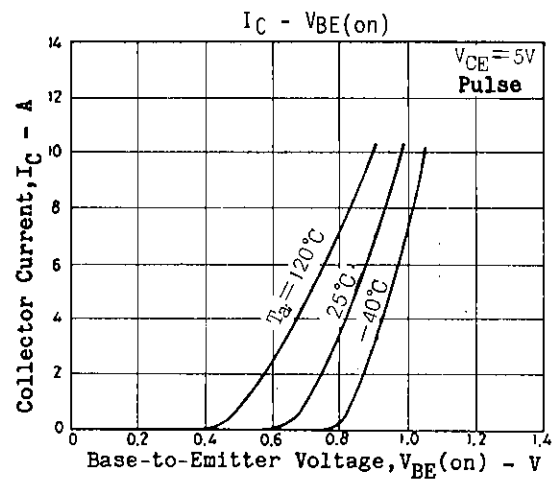
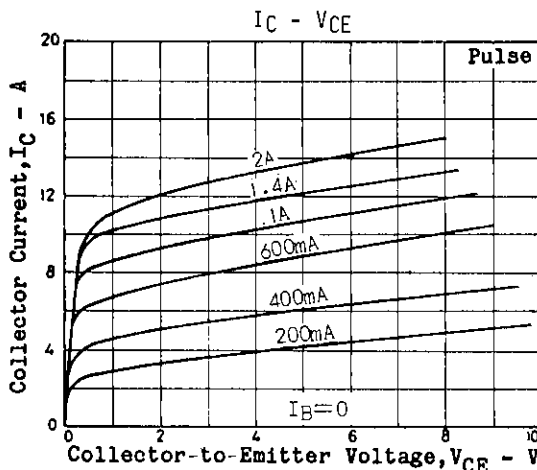
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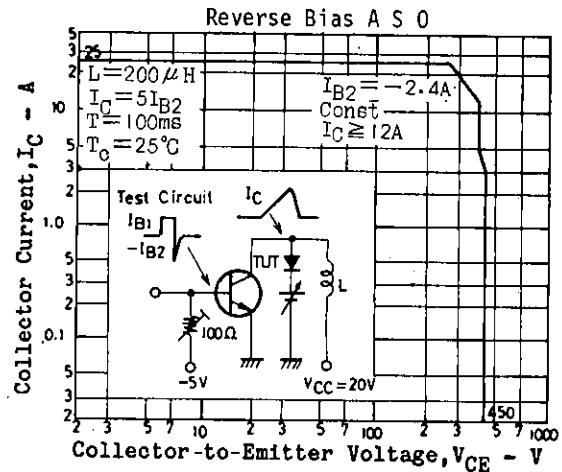
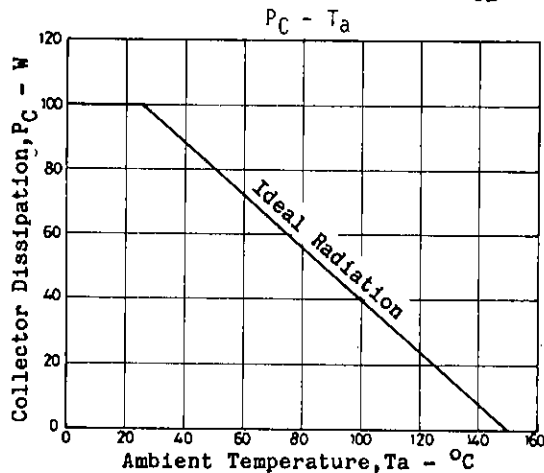
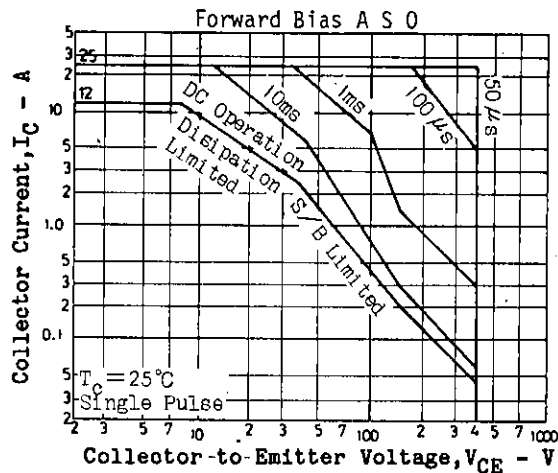
Package Dimensions 2022
(unit:mm)

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			min	typ	max	unit
Turn-ON Time	t_{on}	$I_C=10A, I_{B1}=2A, I_{B2}=-2A,$ $R_L=20\Omega, V_{CC}=200V$			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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