

	No. 996B	<h1 style="margin: 0;">2SC3039</h1> <p style="margin: 0;">NPN Triple Diffused Planar Silicon Transistor</p> <p style="margin: 0;">FOR SWITCHING REGULATORS</p>
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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	7	A
Peak Collector Current	i_{cp}	14	A
		$PW \leq 300\mu s,$	
		Duty Cycle $\leq 10\%$	
Base Current	I_B	3	A
Collector Dissipation	P_C	1.75	W
		$T_c = 25^\circ C$	
Junction Temperature	T_j	50	W
Storage Temperature	T_{stg}	150	$^\circ C$
		-55 to +150	$^\circ C$

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

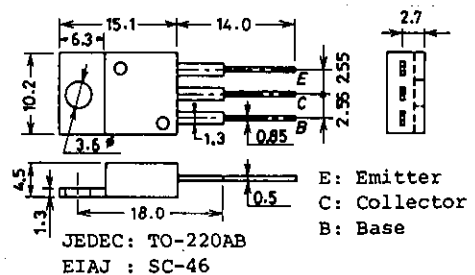
				min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 400V, I_E = 0$				10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$				10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = 5V, I_C = 0.8A$	15*			50*	
	$h_{FE}(2)$	$V_{CE} = 5V, I_C = 4A$	8				
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 4A, I_B = 0.8A$				1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 4A, I_B = 0.8A$				1.5	V
Gain Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 0.8A$		20			MHz
Output Capacitance	c_{ob}	$V_{CB} = 10V, f = 1MHz$		80			pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1mA, I_E = 0$	500				V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5mA, R_{BE} = \infty$	400				V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	7				V
C-E Sustain Voltage	$V_{CEO(sus)}$	$I_C = 7A, I_B = 1.4A, L = 50\mu H$	400				V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 7A, I_{B1} = 1.4A, L = 200\mu H,$	400				V
	(1)	$I_{B2} = -1.4A, \text{clamped}$					
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 1.5A, I_{B1} = 0.3A, L = 200\mu H$	450				V
	(2)	$I_{B2} = -0.3A, \text{clamped}$					

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*: The $h_{FE}(1)$ of the 2SC3039 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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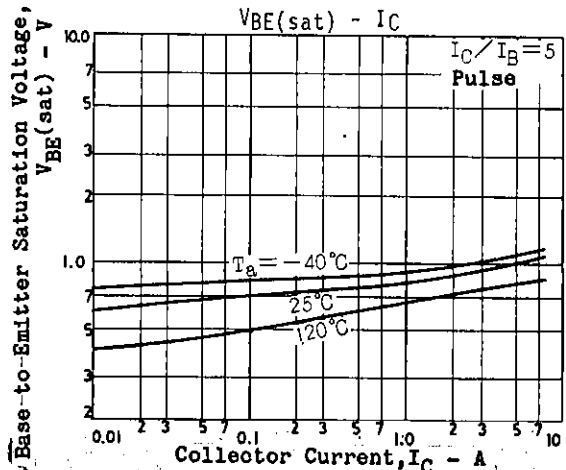
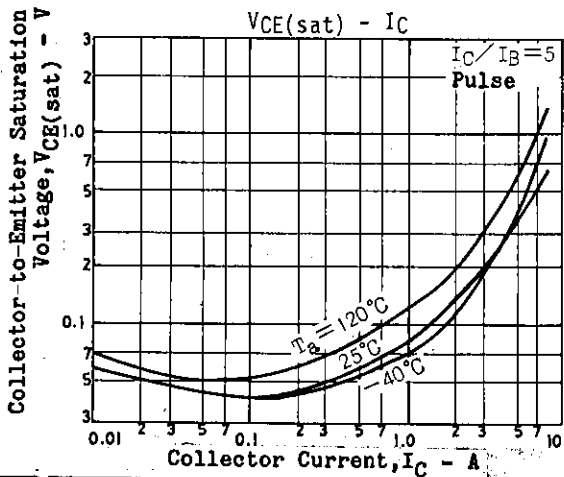
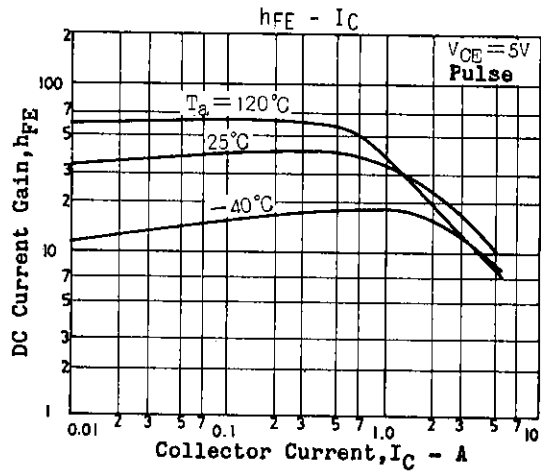
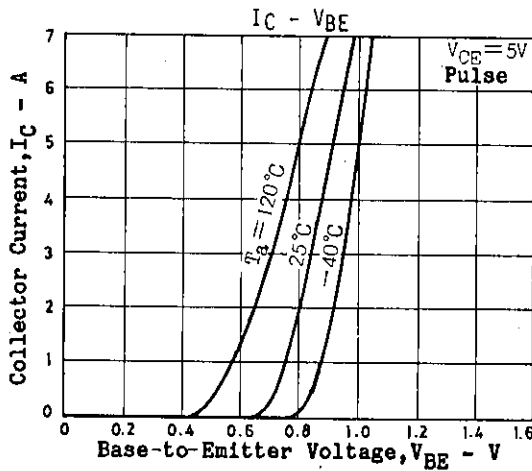
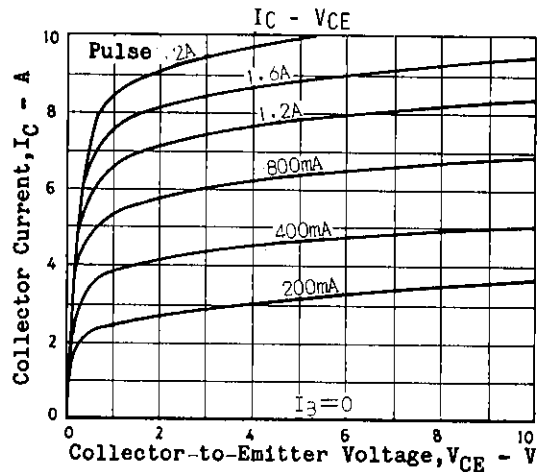
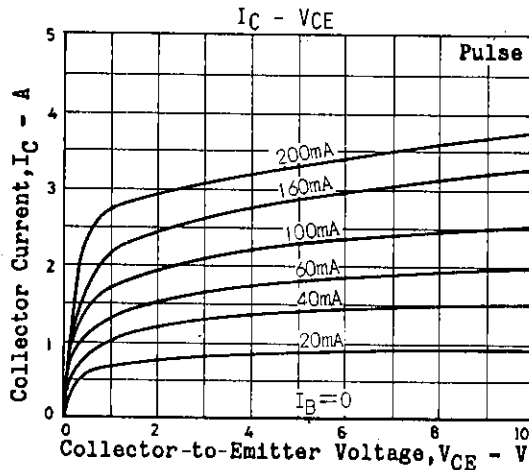
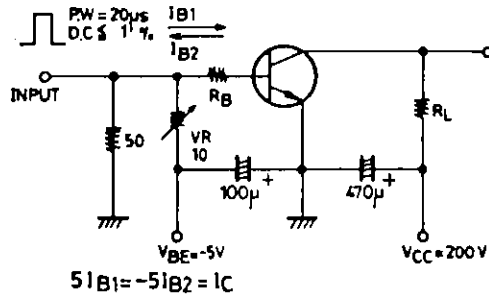
Package Dimensions 2010A
(unit: mm)

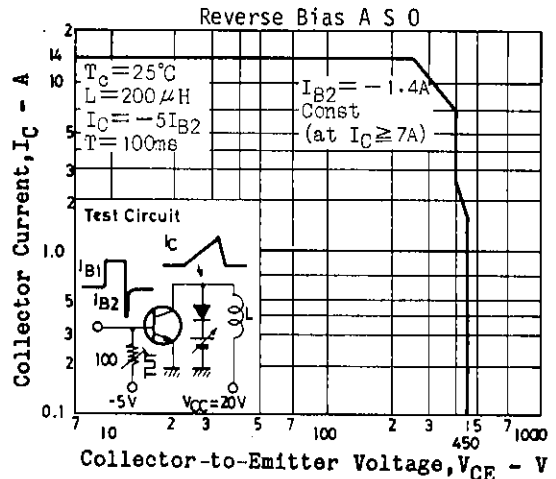
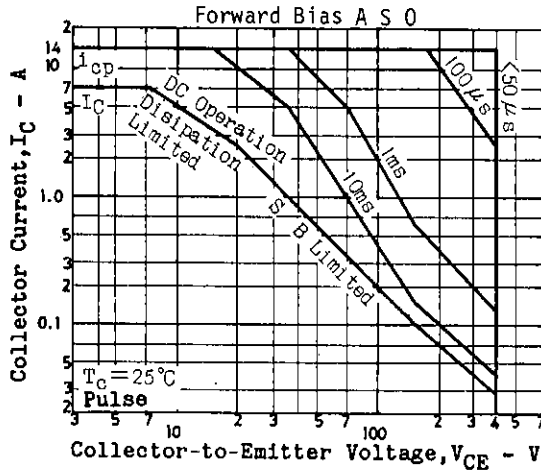
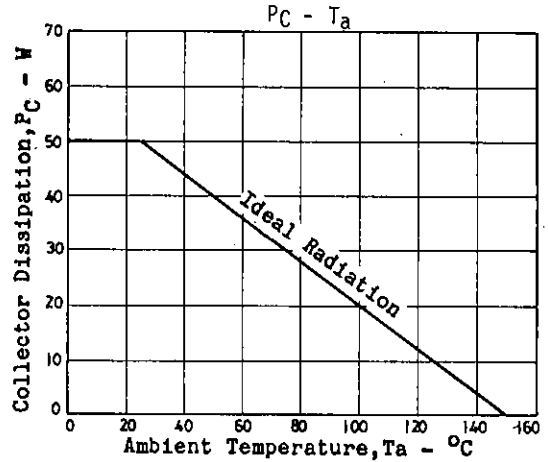
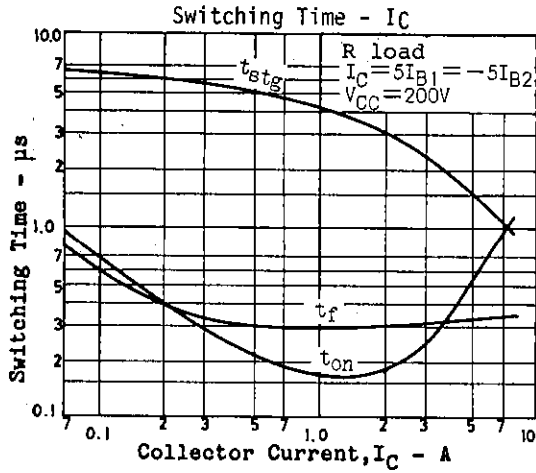


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			min	typ	max	unit
Turn-ON Time	t_{on}	$I_C=5A, I_{B1}=1A, I_{B2}=-1A,$ $R_L=40\Omega, V_{CC}=200V$			1.0	μs
Storage Time	t_{stg}	" "			2.5	μs
Fall Time	t_f	" "			1.0	μs

Switching Time Test Circuit





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