

SANYO	No. 1012A	2SC3089
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	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	2.5	W
		$T_c=25^\circ C$	
Junction Temperature	T_j	80	W
Storage Temperature	T_{stg}	150	$^\circ C$
		-55 to +150	$^\circ C$

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

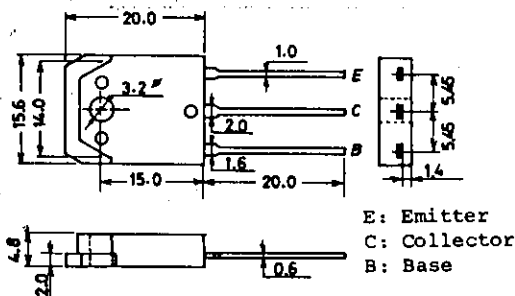
				min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=500V, I_E=0$				10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$				10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5V, I_C=0.6A$	15*			50*	
	$h_{FE}(2)$	$V_{CE}=5V, I_C=3A$	8				
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=0.6A$				1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=0.6A$				1.5	V
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.6A$		18			MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1MHz$		80			pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	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	$V_{CEO(sus)}$	$I_C=7A, I_B=0.14A, L=50\mu H$	500				V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=7A, I_{B1}=0.14A, L=200\mu H,$	500				V
	(1)	$I_{B2}=-0.14A, clamped$					
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=1.2A, I_{B1}=0.24A, L=200\mu H$	550				V
	(2)	$I_{B2}=-0.24A, clamped$					

Continued on next page.

*: The $h_{FE}(1)$ of the 2SC3089 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)

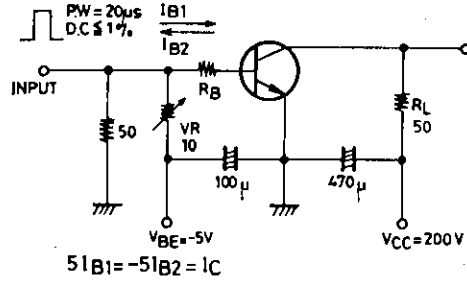


E: Emitter
C: Collector
B: Base

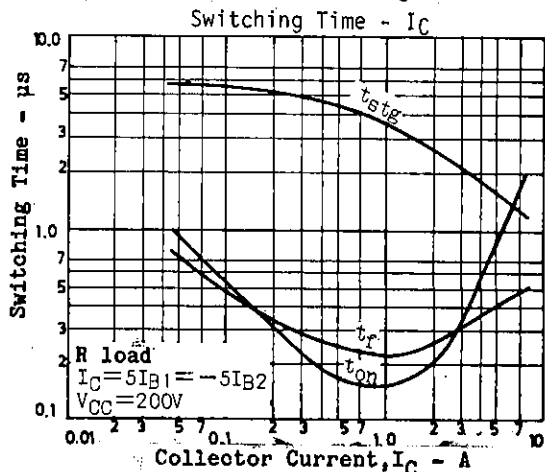
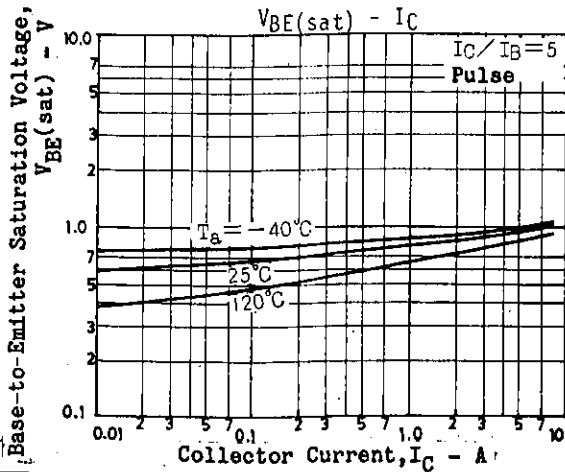
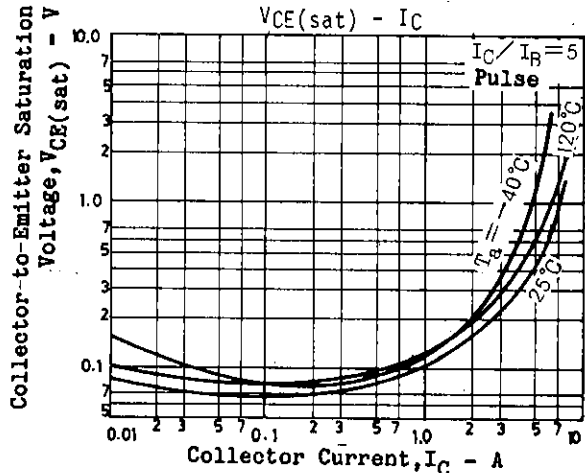
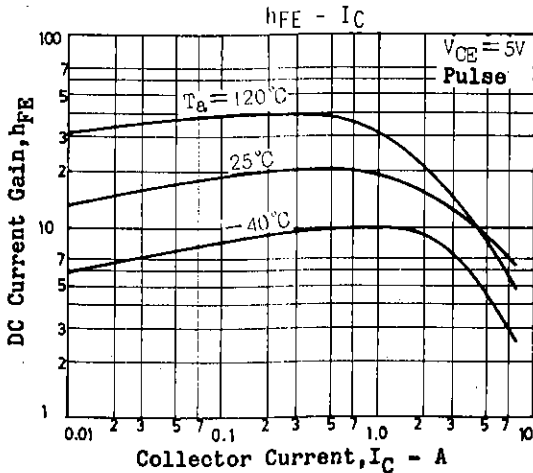
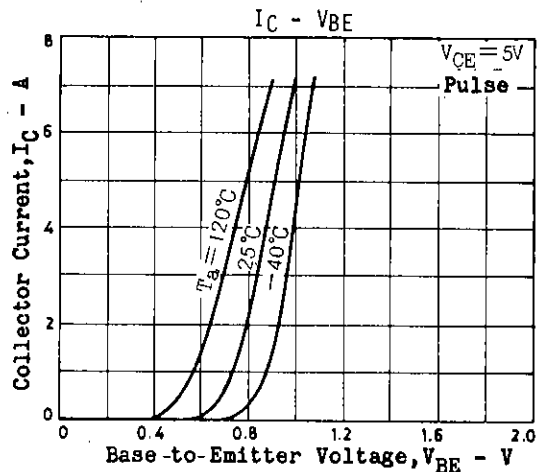
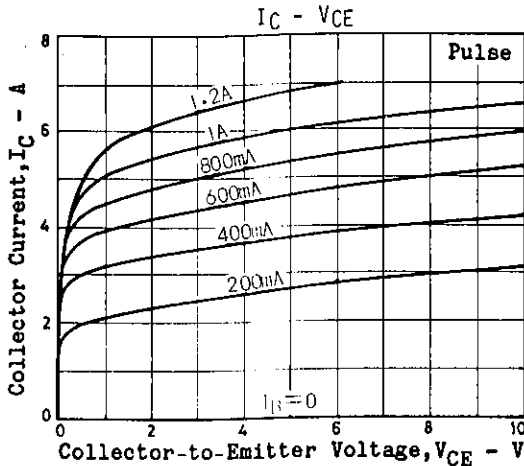
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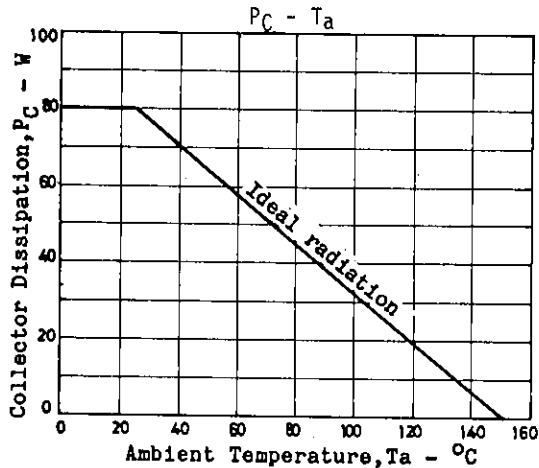
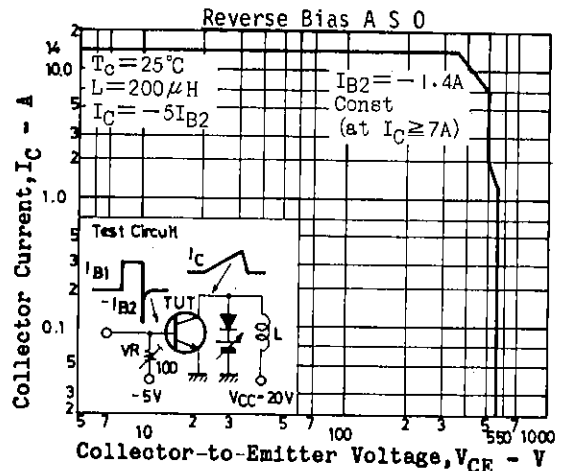
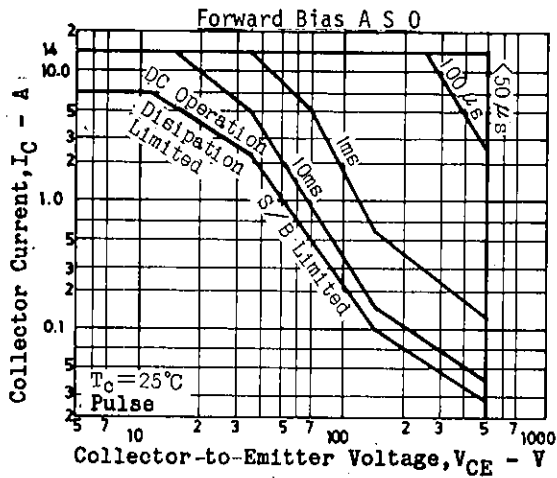
			min	typ	max	unit
Turn-ON Time	t_{on}	$I_C=4A, I_{B1}=0.8A, I_{B2}=-0.8A,$			1.0	μs
		$R_L=50ohms, V_{CC}=200V$				
Storage Time	t_{stg}	" "			3.0	μs
Fall Time	t_f	" "			1.0	μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)





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