

**SANYO**

No.1068C

**2SC3149**

NPN Triple Diffused Planar Silicon Transistor

FOR SWITCHING REGULATORS

**Features**

- . High breakdown voltage ( $V_{CBO} \geq 900V$ ).
- . Fast switching speed.
- . Wide ASO.

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

			unit
Collector-to-Base Voltage	$V_{CBO}$	900	V
Collector-to-Emitter Voltage	$V_{CEO}$	800	V
Emitter-to-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	1.5	A
Peak Collector Current	$i_{cp}$	5	A
		PW $\leq$ 300 $\mu$ s, Duty Cycle $\leq$ 10%	
Base Current	$I_B$	0.8	A
Collector Dissipation	$P_C$	40	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

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

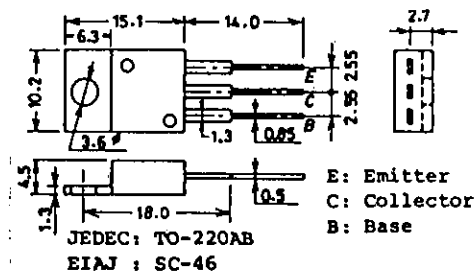
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=800V, I_E=0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			10	$\mu A$
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5V, I_C=0.1A$	10*		40*	
	$h_{FE}(2)$	$V_{CE}=5V, I_C=0.5A$	8			
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=0.1A$		15		MHz
Output Capacitance	$c_{ob}$	$V_{CB}=10V, f=1MHz$		30		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=0.75A, I_B=0.15A$			2.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=0.75A, I_B=0.15A$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$		900		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$		800		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$		7		V
C-E Sustain Voltage	$V_{CEO(sus)}$	$I_C=1.5A, L=1mH, I_B=0.5A$		800		V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=0.5A, I_{B1}=0.1A$		800		V
	(1)	$I_{B2}=-0.1A, L=5mH, clamped$				
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=0.25A, I_{B1}=0.05A,$		900		V
	(2)	$I_{B2}=-0.05A, L=10mH, clamped$				

Continued on next page.

\*: The  $h_{FE}(1)$  of the 2SC3149 is classified as follows. When specifying the  $h_{FE}(1)$  rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
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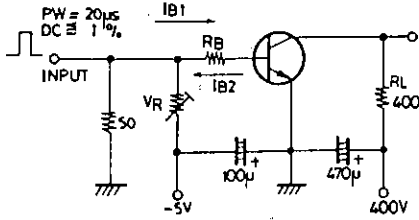
**Package Dimensions 2010A**  
(unit:mm)



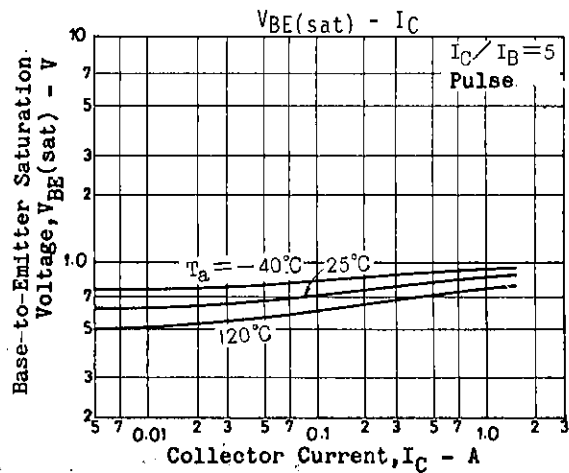
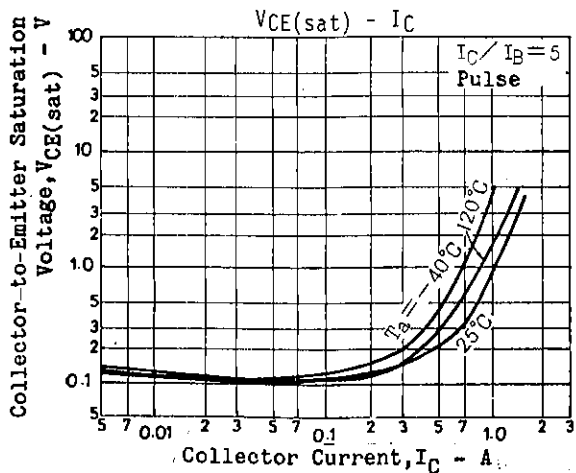
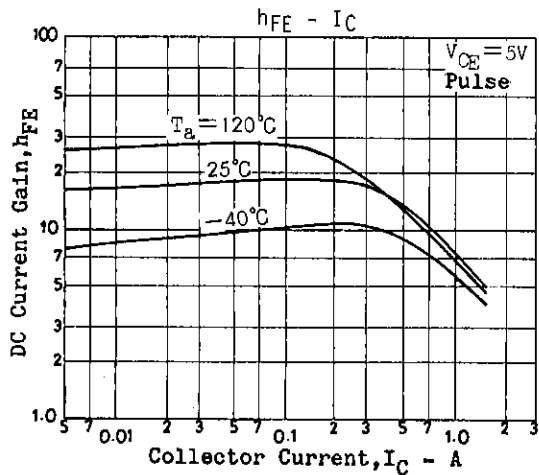
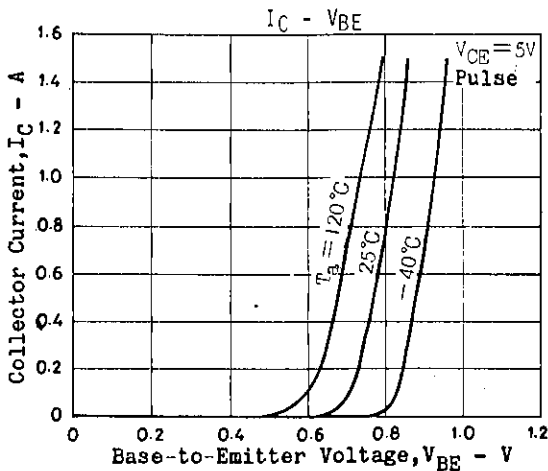
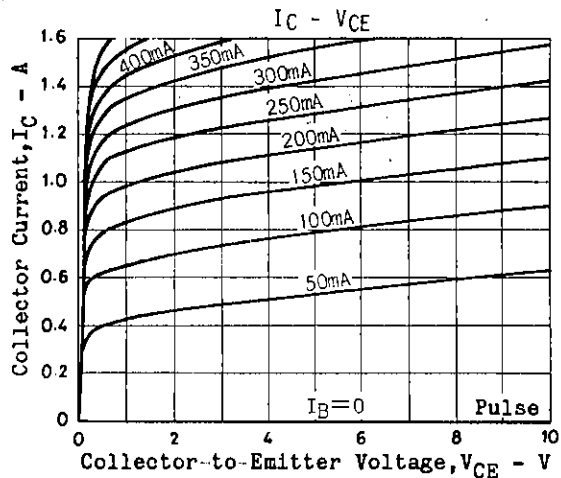
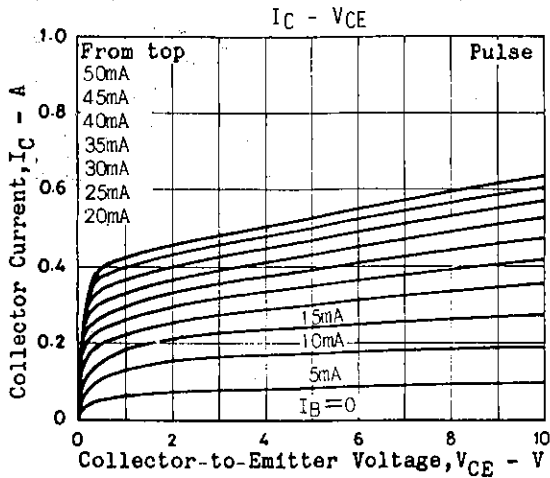
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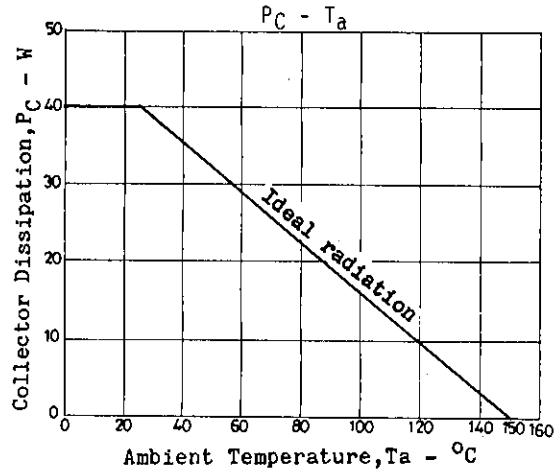
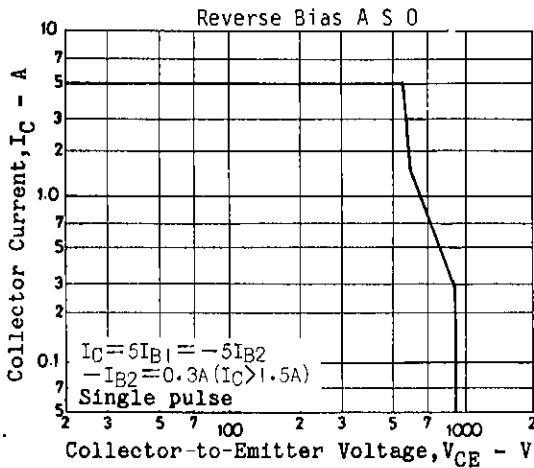
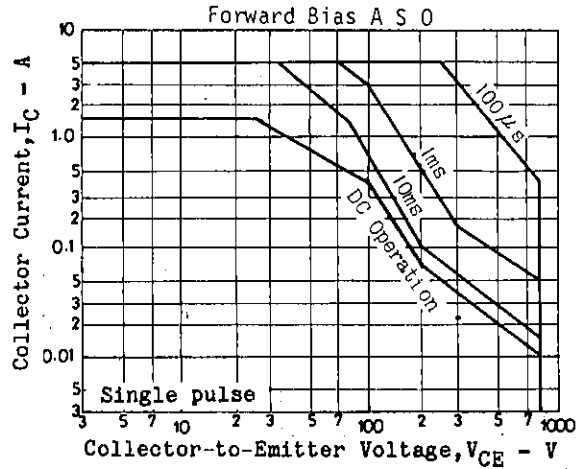
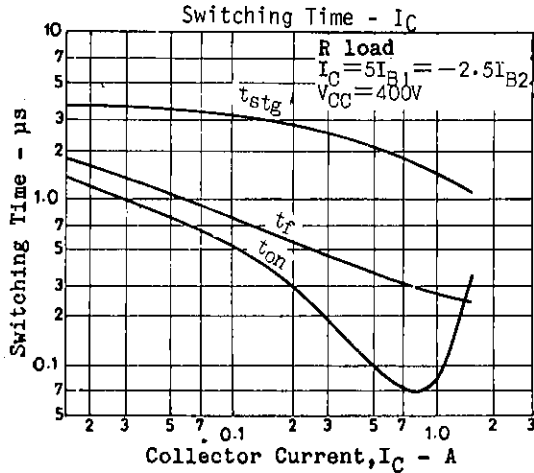
			min	typ	max	unit
Turn-ON Time	$t_{on}$	$(I_C=1A, I_{B1}=0.2A, I_{B2}=-0.4A,$ $R_L=400\Omega, V_{CC}=400V$			1.0	$\mu s$
Storage Time	$t_{stg}$	" "			3.0	$\mu s$
Fall Time	$t_f$	" "			0.7	$\mu s$

**Switching Time Test Circuit**



Unit (Resistance :  $\Omega$ , Capacitance : F)





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