

SANYO

No.2816A

2SC4221

NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

- . High breakdown voltage, high reliability
- . Fast switching speed (t_f : 0.1us typ)
- . Wide ASO
- . Adoption of MBIT process
- . Suitable for sets whose height is restricted

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

			unit
Collector to Base Voltage	V_{CB0}	800	V
Collector to Emitter Voltage	V_{CE0}	500	V
Emitter to Base Voltage	V_{EB0}	7	V
Collector Current	I_C	3	A
Peak Collector Current	i_{cp} $PW \leq 300\mu s, \text{duty cycle} \leq 10\%$	6	A
Base Current	I_B	1	A
Allowable Power Dissipation	P_C $T_c=25^\circ\text{C}$	40	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

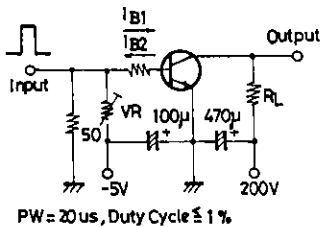
		min	typ	max	unit
Collector Cutoff Current	I_{CB0} $V_{CB}=500V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EB0} $V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$ *	15		50	
	$h_{FE(2)}$	8			
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=1.5A, I_B=0.3A$			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$ $I_C=1.5A, I_B=0.3A$			1.5	V
Gain-Bandwidth Product	f_T $V_{CE}=10V, I_C=0.3A$		18		MHz
Output Capacitance	c_{ob} $V_{CB}=10V, f=1\text{MHz}$		50		pF

Continued on next page.

*:The $h_{FE(1)}$ of the 2SC4221 is classified as follows. When specifying the $h_{FE(1)}$ rank, specify two ranks or more.

15	L	30	20	M	40	30	N	50
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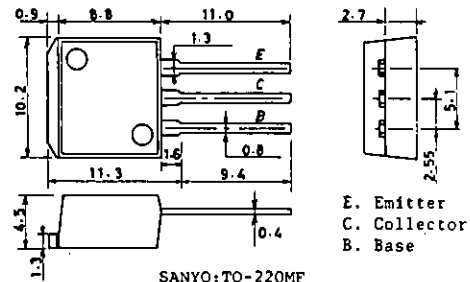
Switching Time Test Circuit



$PW = 20\mu s, \text{Duty Cycle} \leq 1\%$

Unit (resistance: Ω , capacitance: F)

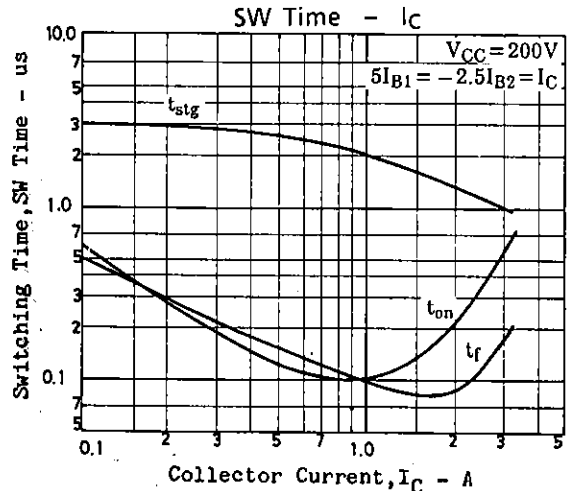
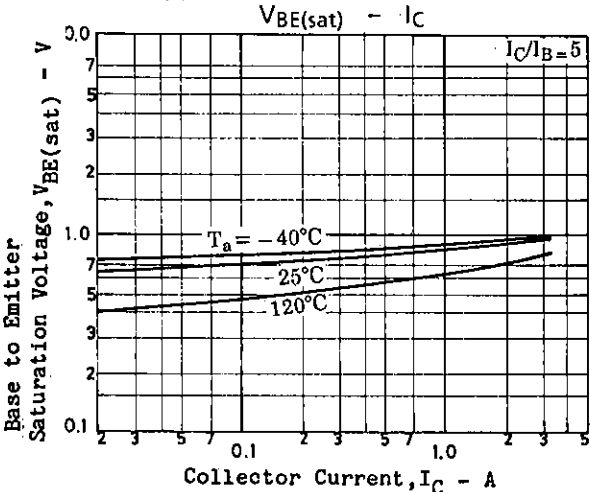
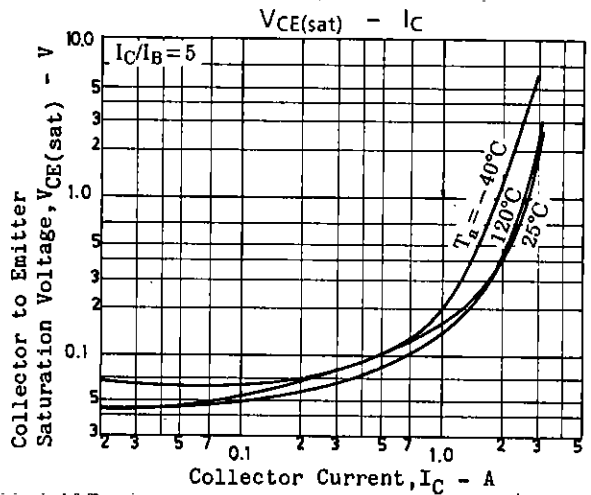
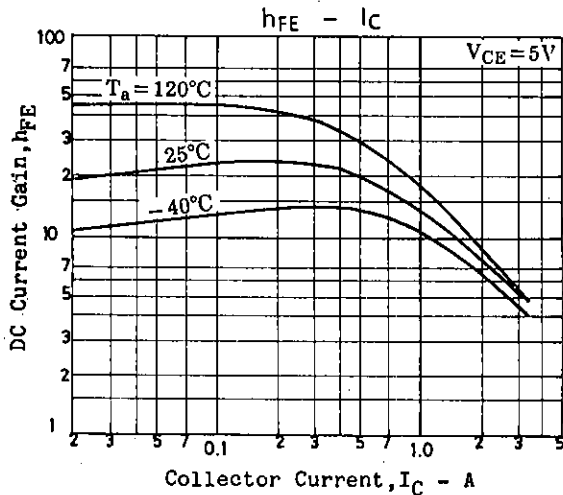
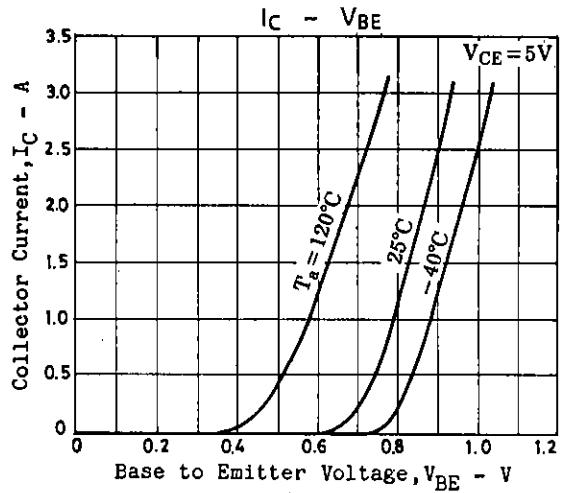
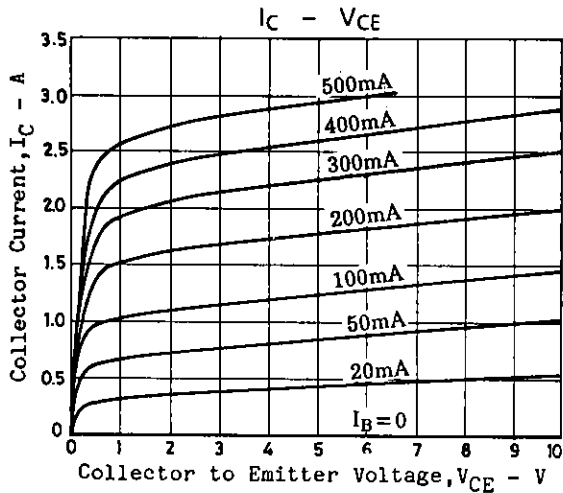
Package Dimensions 2049A (unit: mm)

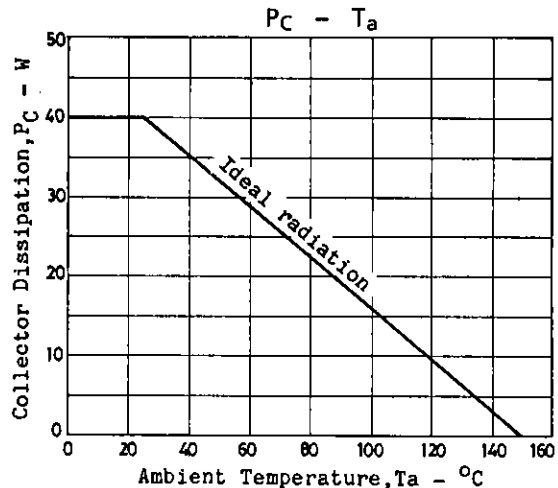
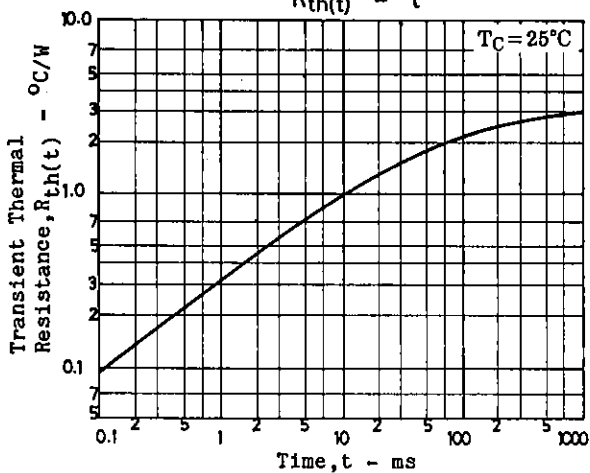
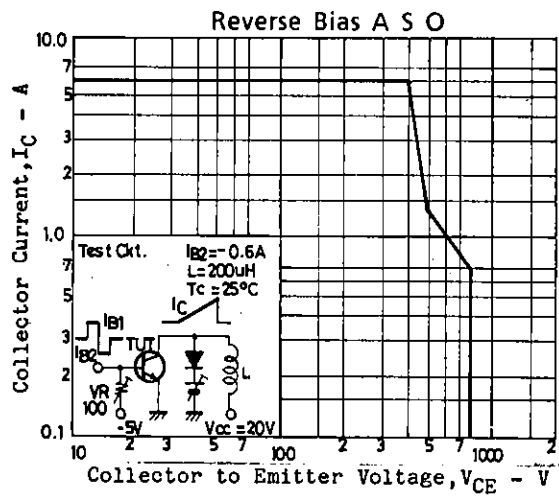
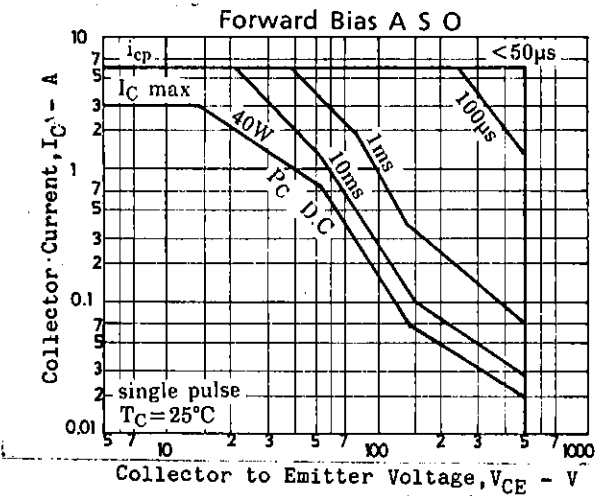


E. Emitter
C. Collector
B. Base

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			min	typ	max	unit
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	$V_{CEX(sus)}$	$I_C=1.5A, I_{B1}=0.6A$ $L=2mH, I_{B2}=-0.6A, \text{clamped}$	500			V
Turn-ON Time	t_{on}	$I_C=2A, I_{B1}=0.4A$ $I_{B2}=-0.8A, R_L=100\text{ohms}$ $V_{CC}=200V$		0.5		μs
Storage Time	t_{stg}			3.0		μs
Fall Time	t_f			0.3		μs





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