

SANYO	No. 2825	2SC4220
	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}	500	V
Collector to Emitter Voltage	V_{CE0}	400	V
Emitter to Base Voltage	V_{EB0}	7	V
Collector Current	I_C	7	A
Peak Collector Current	i_{cp} $PW \leq 300\mu s, \text{duty cycle} \leq 10\%$	14	A
Base Current	I_B	3	A
Collector Dissipation	P_C	1.65	W
	$T_c=25^\circ\text{C}$	50	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

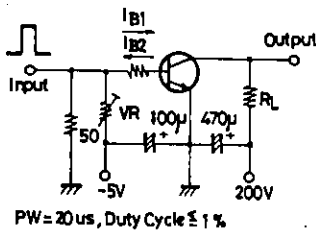
		min	typ	max	unit
Collector Cutoff Current	I_{CBO} $V_{CB}=400V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO} $V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	$h_{FE}(1)$ $V_{CE}=5V, I_C=0.8A$	15		50	
	$h_{FE}(2)$ $V_{CE}=5V, I_C=4A$	10			
	$h_{FE}(3)$ $V_{CE}=5V, I_C=10mA$	10			
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=4A, I_B=0.8A$			0.8	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

Continued on next page.

*:The $h_{FE}(1)$ of the 2SC4220 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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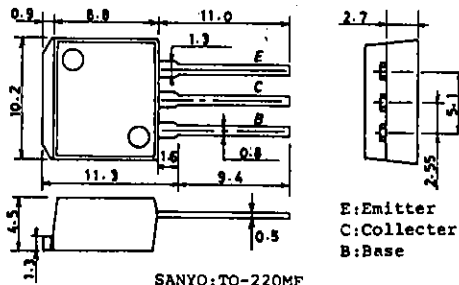
Switching Time Test Circuit



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

Unit (resistance: Ω , capacitance: F)

Package Dimensions 2049 (unit: mm)

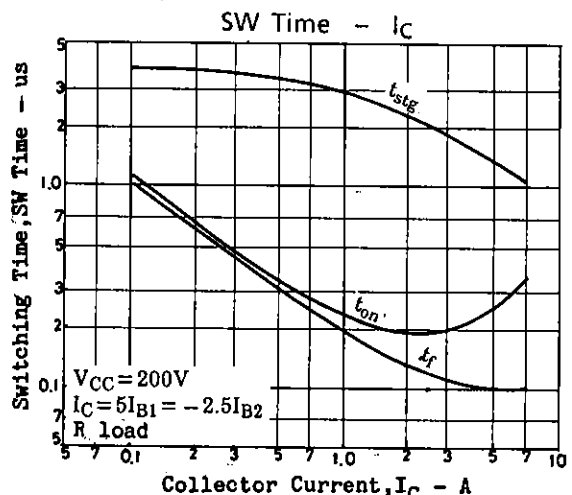
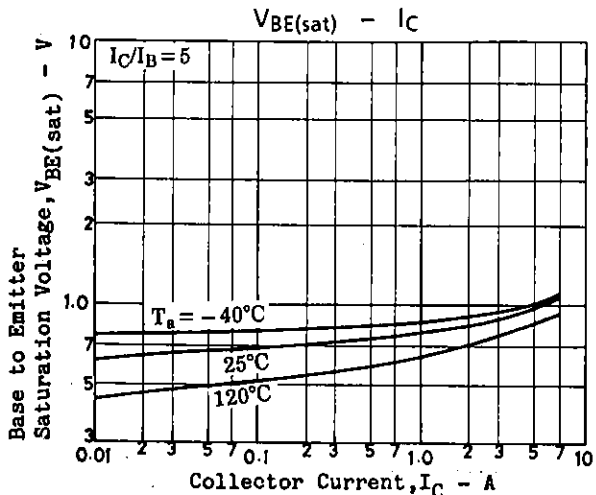
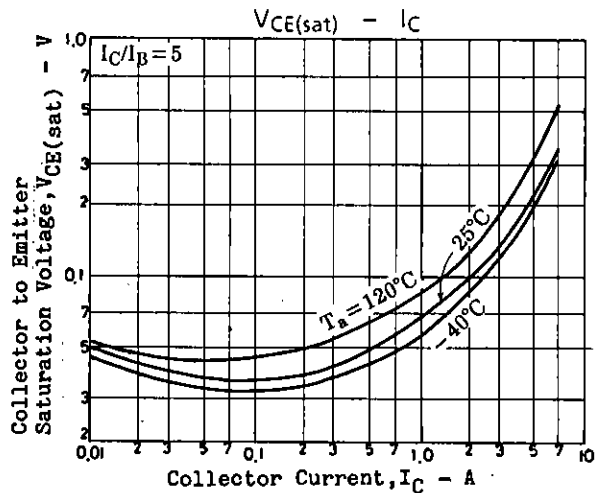
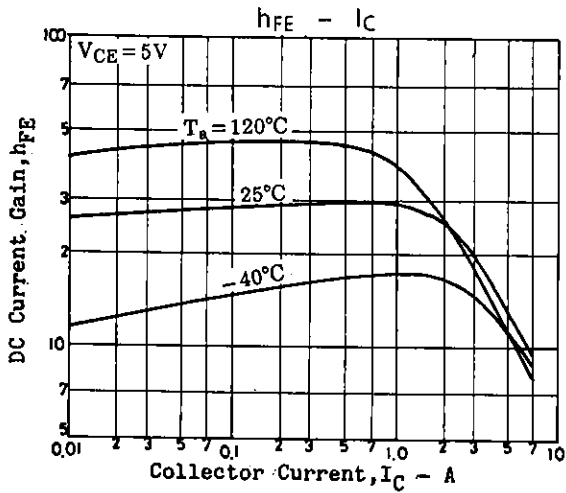
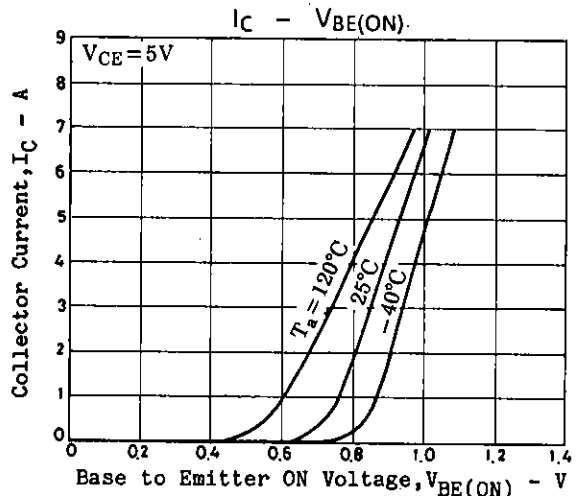
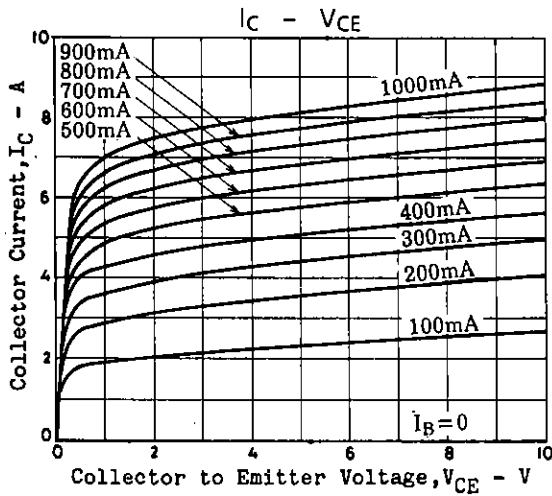


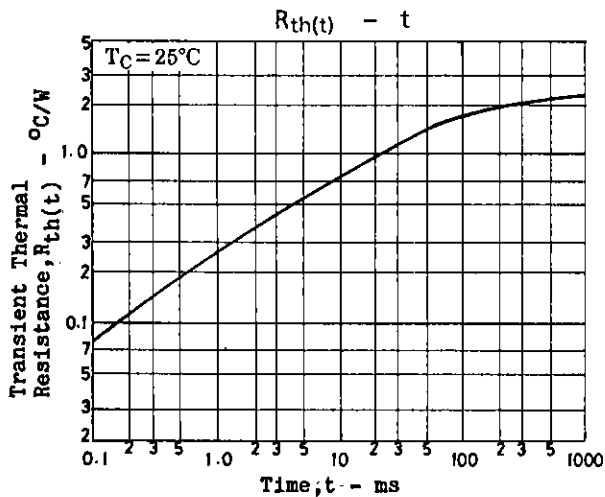
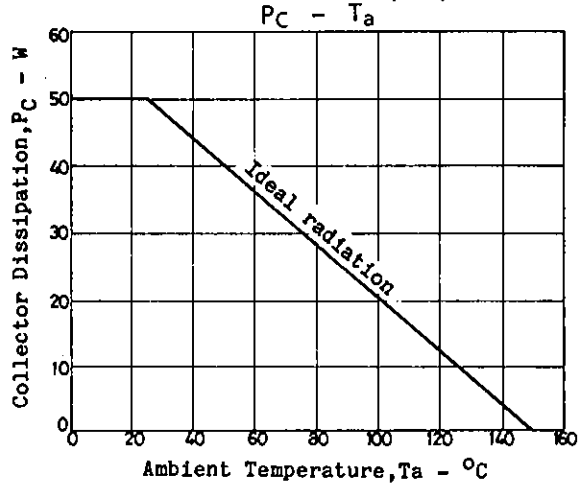
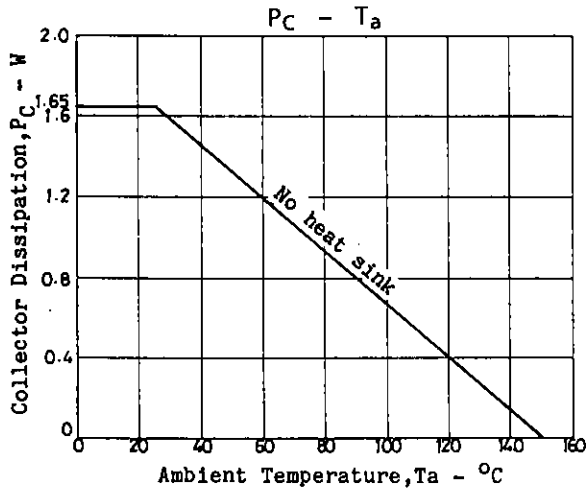
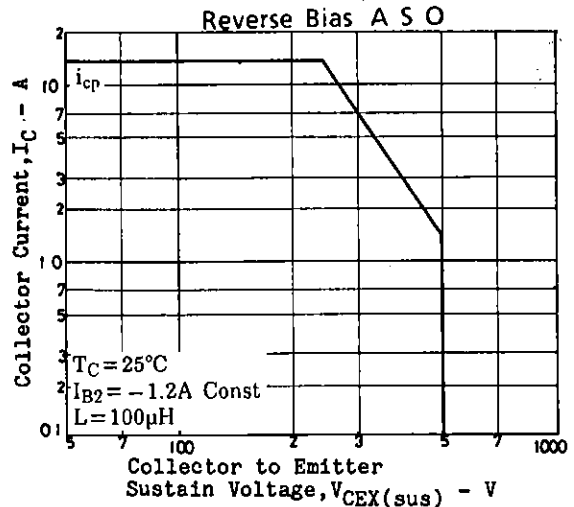
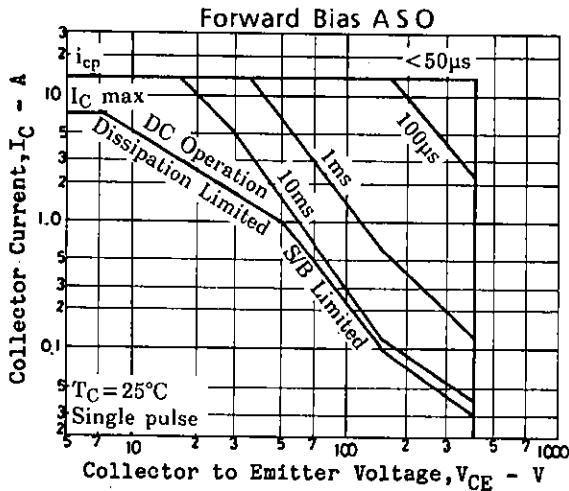
SANYO: TO-220MF

E: Emitter
C: Collector
B: Base

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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	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	$V_{CEX(sus)}$	$I_C=3A, I_{B1}=-0.3A$ $L=1mH, I_{B2}=-1.2A, clamped$	400			V
Turn-ON Time	t_{on}	$I_C=5A, I_{B1}=1A$ $I_{B2}=-2A, R_L=40ohms$ $V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}				2.5	μs
Fall Time	t_f				0.3	μs





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