

SANYO

No.2482

2SC4161

NPN Triple Diffused Planar Type
Silicon Transistor

SWITCHING REGULATOR APPLICATIONS

Features

- High breakdown voltage, high reliability
- Fast switching speed ($t_f=0.1\mu s$ typ)
- Wide ASO
- Adoption of MBIT process
- Micaless package facilitating mounting

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}	$PW \leq 300\mu s, \text{duty cycle} \leq 10\%$	14 A
Base Current	I_B	3	A
Collector Dissipation	P_C	2	W
		$T_c=25^\circ C$	30 W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

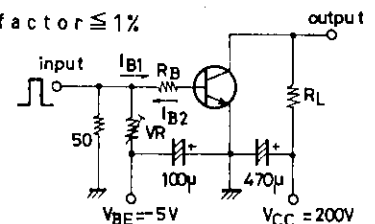
Electrical Characteristics at $T_a=25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=400V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=0.8A$	15*		50*	
	h_{FE2}	$V_{CE}=5V, I_C=4A$	10			
	h_{FE3}	$V_{CE}=5V, I_C=10mA$	10			
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-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
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

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Switching Time Test Circuit

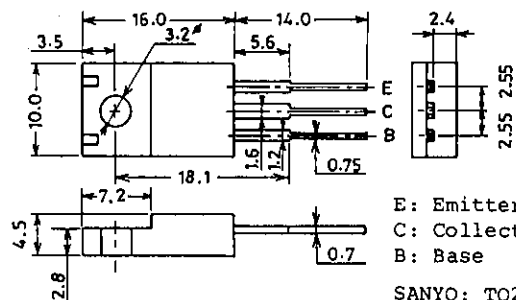
$PW=20\mu s, \text{duty factor} \leq 1\%$



Unit (Resistance : Ω , Capacitance : F)

Package Dimensions 2041

(unit: mm)



E: Emitter
C: Collector
B: Base

SANYO: TO220ML

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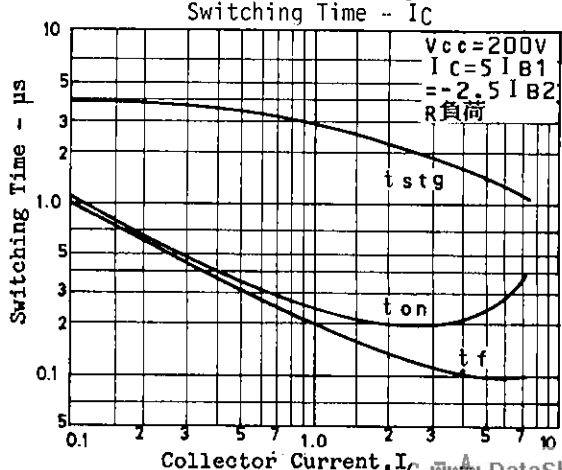
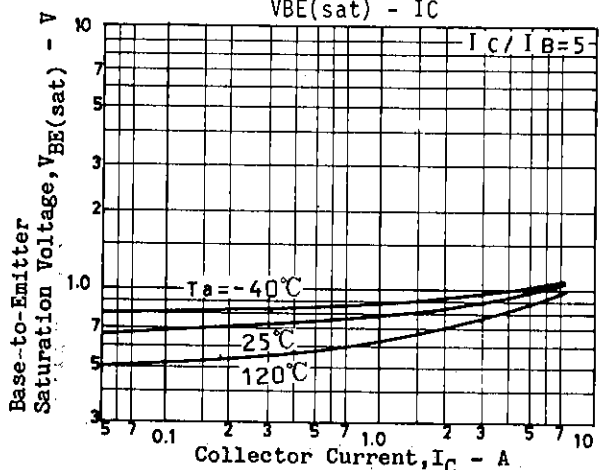
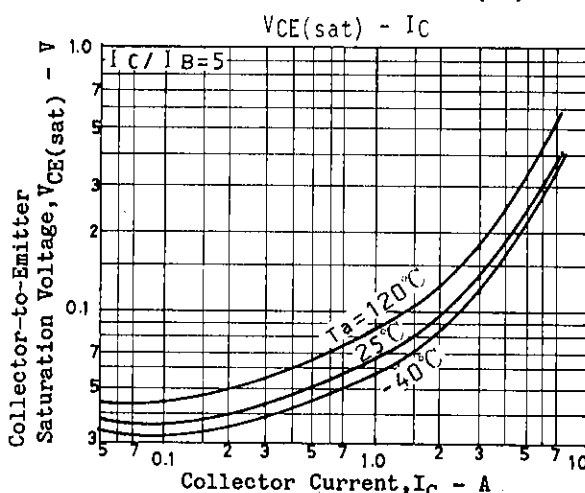
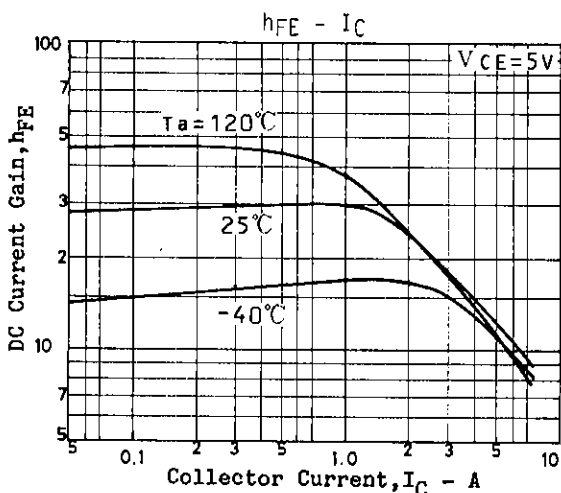
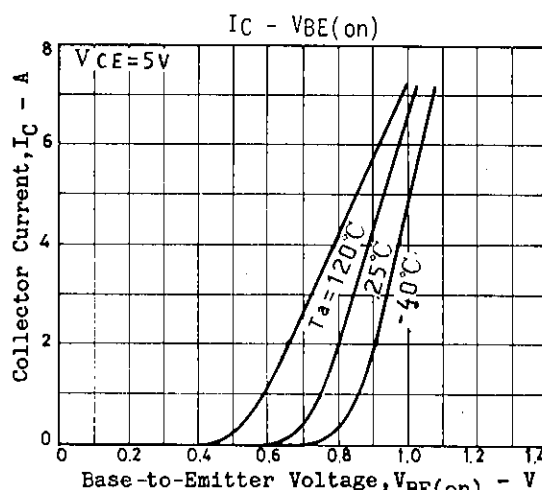
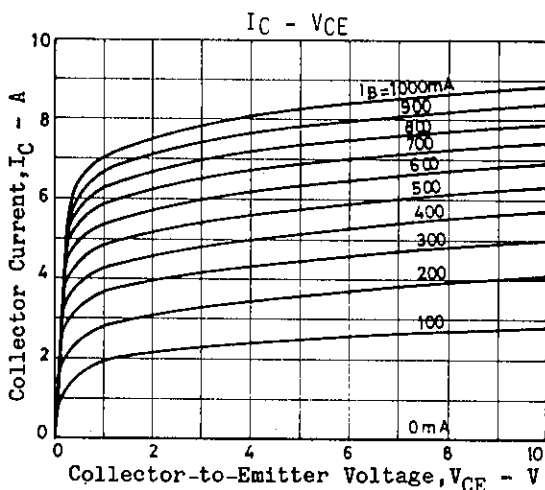
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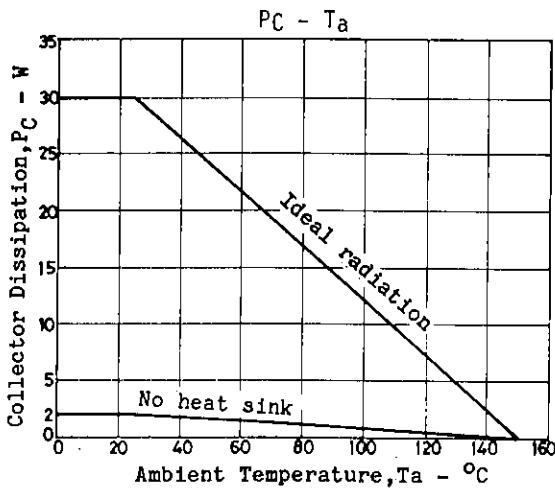
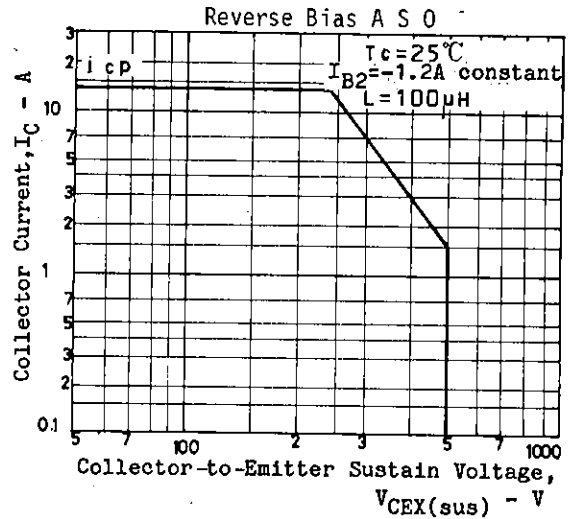
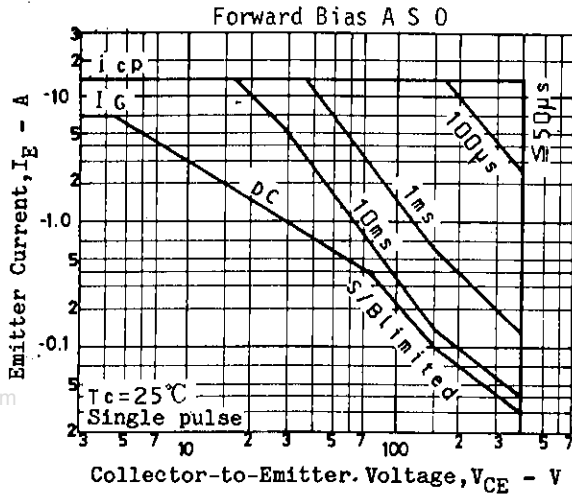
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			min	typ	max	unit
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=3A, I_{B1}=0.3A,$ $I_{B2}=-1.2A, L=1mH, \text{clamped}$	400			V
Turn-on Time	t_{on}	$I_C=5A, I_{B1}=1A, I_{B2}=-2A,$ $R_L=40\text{ohms}, V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}	" "			2.5	μs
Fall Time	t_f	" "			0.3	μs

*: The h_{FE1} of the 2SC4161 is classified as follows. When specifying the h_{FE1} rank, specify two ranks or more in principle.

15	L	30	20	M	40	30	N	50
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