

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_{CB0}	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
Base Current	I_B	3	A
Collector Dissipation	P_C	2	W
		$T_c=25^\circ C$	30
Junction Temperature	T_j		150
Storage Temperature	T_{stg}		-55 to +150

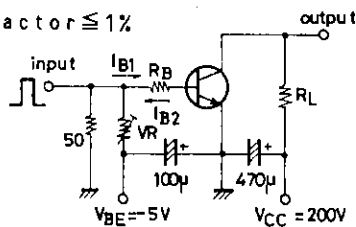
Electrical Characteristics at $T_a=25^\circ C$

			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

Continued on next page.

Switching Time Test Circuit

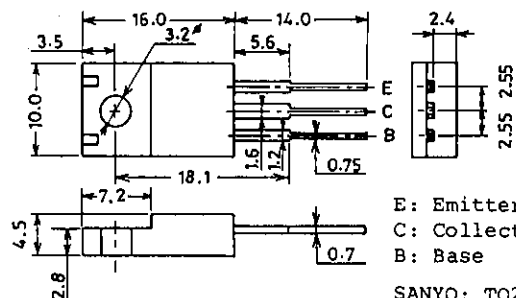
$PW=20\mu s, \text{duty factor} \leq 1\%$



Unit (Resistance : Ω , Capacitance : F)

Package Dimensions 2041

(unit: mm)



E: Emitter
C: Collector
B: Base

SANYO: TO220M

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

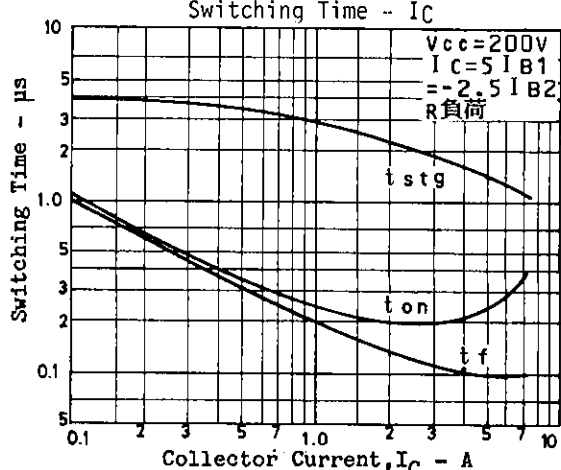
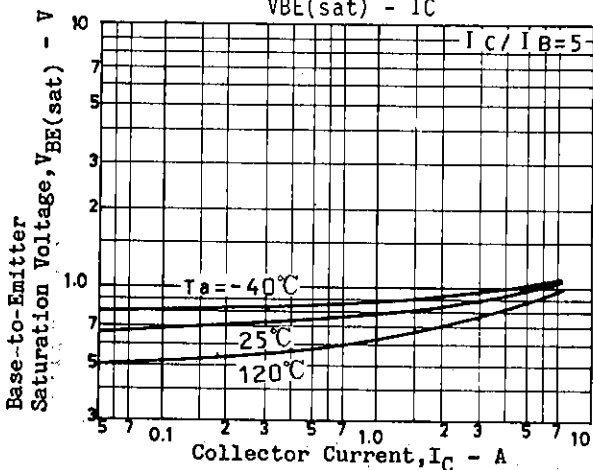
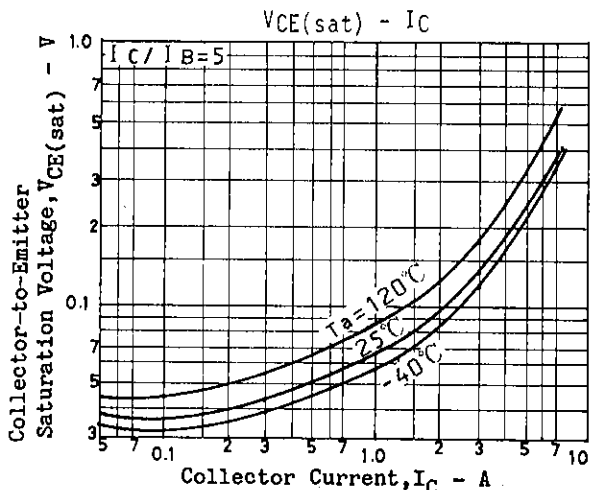
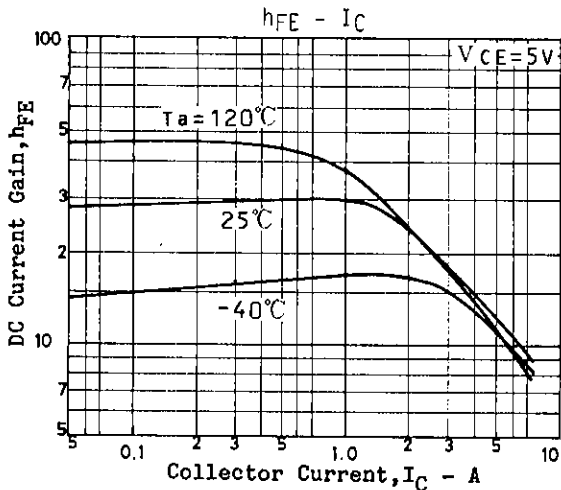
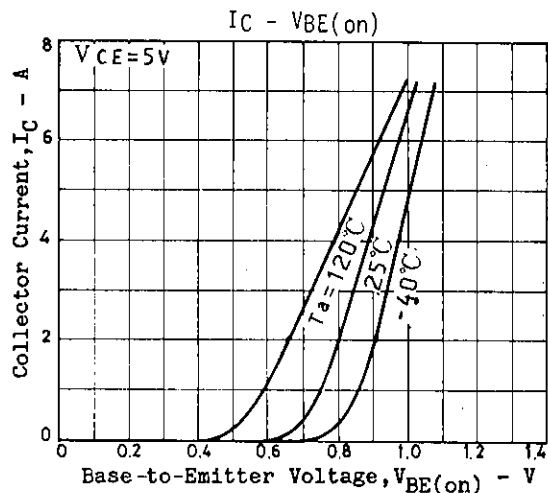
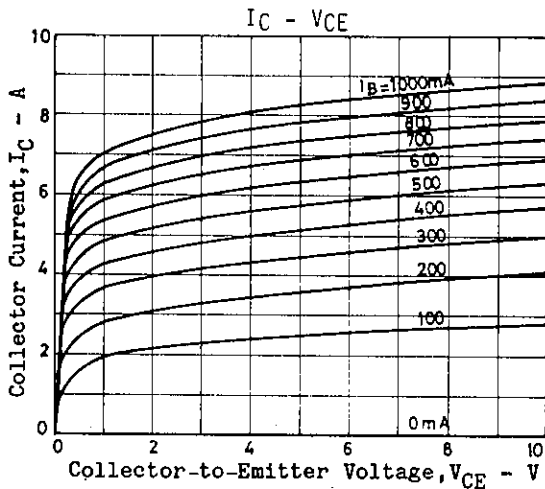
2SC4161

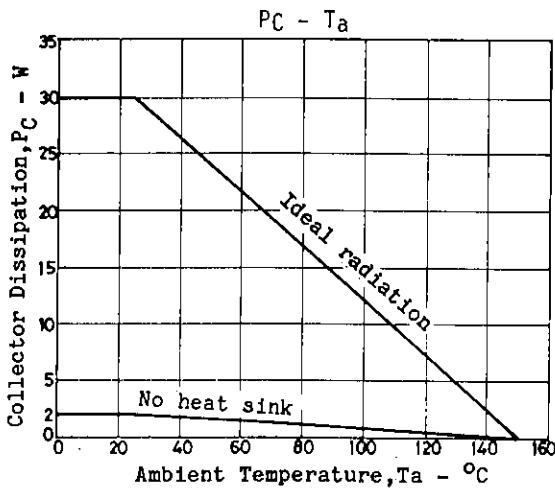
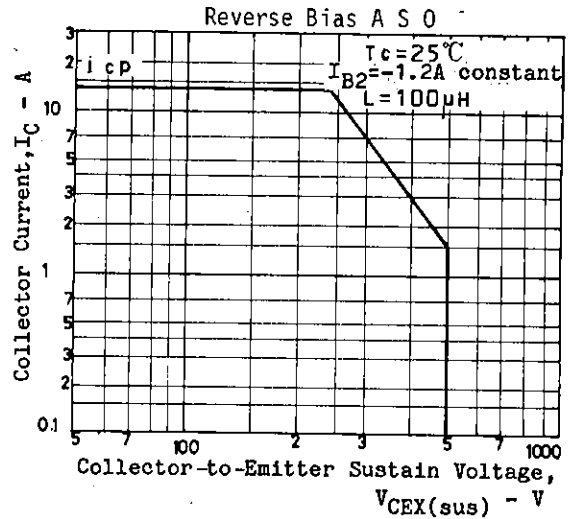
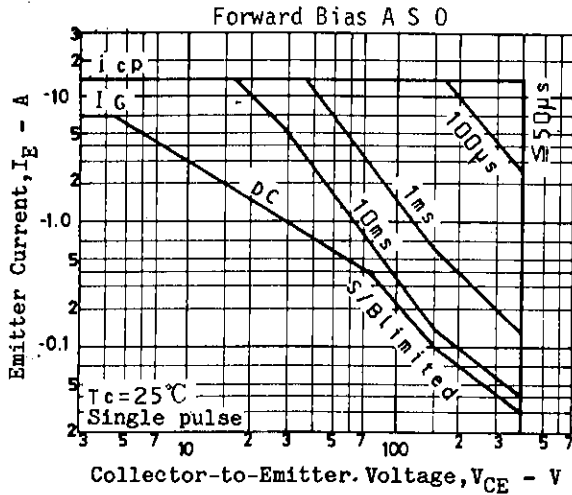
Continued from preceding page.

			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
----	---	----	----	---	----	----	---	----





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.