

SANYO

No.2484B

2SC4163

NPN Triple Diffused Planar Silicon Transistor

400V/12A Switching Regulator Applications**Features**

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

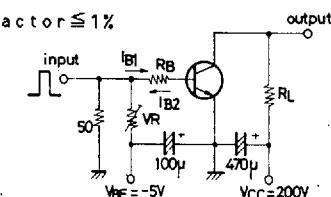
Absolute Maximum Ratings at $T_a=25^\circ C$

			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	12	A
Collector Current (Pulse)	I_{CP}	$PW \leq 300\mu s, \text{duty cycle} \leq 10\%$	
Base Current	I_B	4	A
Collector Dissipation	P_C	2	W
		40	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

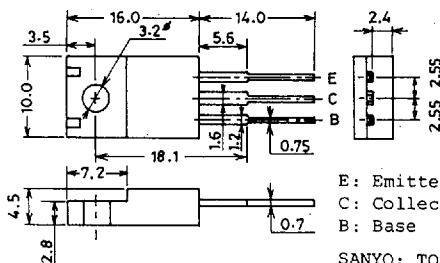
Electrical Characteristics at $T_a=25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=400V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=1.6A$	15*		50*	
	h_{FE2}	$V_{CE}=5V, I_C=8A$	10			
	h_{FE3}	$V_{CE}=5V, I_C=10mA$	10			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=1.6A$		20		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		160		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=8A, I_B=1.6A$			0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=8A, I_B=1.6A$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, R_{BE}=\infty$	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: TO220ML

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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

Continued from preceding page.

			min	typ	max	unit
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=6A, I_{B1}=0.6A,$ $I_{B2}=-2.4A, L=500\mu H, \text{clamped}$	400			V
Turn-on Time	t_{on}	$I_C=10A, I_{B1}=2A, I_{B2}=-4A,$ $R_L=20\Omega, V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}	"			2.5	μs
Fall Time	t_f	"			0.3	μs

*: The h_{FE1} of the 2SC4163 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
----	---	----	----	---	----	----	---	----

