

SANYO

No.2470A

2SC4105

NPN Triple Diffused Planar Silicon Transistor

400V/4A Switching Regulator Applications**Features**

- High breakdown voltage and high reliability
- Fast switching speed
- Wide ASO
- Adoption of MBIT process

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

Absolute Maximum Ratings at Ta=25°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		4	A
Collector Current (Pulse)	I _{CP}	PW≤300μs,duty cycle≤10%	8	A
Base Current	I _B		1.5	A
Collector Dissipation	P _C		1.75	W
		Tc=25°C	40	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

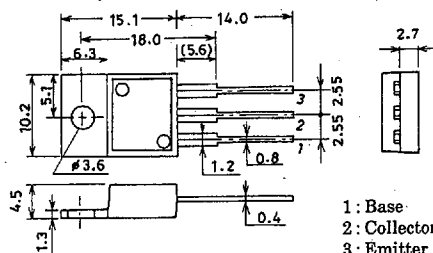
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CB}=400\text{V}, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=0.4\text{A}$	15*		50*	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=2\text{A}$	10			
	$h_{FE(3)}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10			
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.4\text{A}$			0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=0.4\text{A}$			1.5	V
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.4\text{A}$		20		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		50		pF

Continued on next page.

*: The h_{FE1} of the 2SC4105 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
----	---	----	----	---	----	----	---	----

Package Dimensions 2010C
(unit:mm)

1: Base
2: Collector
3: Emitter

JEDEC: TO220AB
EIAJ: SC46

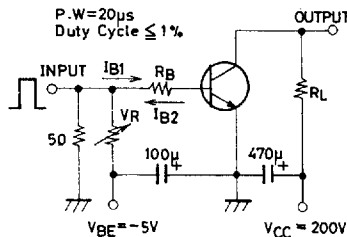
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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

Continued from preceding page.

			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5\text{mA}, R_{BE}=\infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	7			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=2\text{A}, I_{B1}=0.2\text{A},$ $I_{B2}=-0.8\text{A}, L=1\text{mH}, \text{clamped}$	400			V
Turn-on Time	t_{on}	$I_C=3\text{A}, I_{B1}=0.6\text{A},$ $I_{B2}=-1.2\text{A}, R_L=66.6\Omega,$ $V_{CC}=200\text{V}$		0.5		μs
Storage Time	t_{stg}	$I_C=3\text{A}, I_{B1}=0.6\text{A},$ $I_{B2}=-1.2\text{A}, R_L=66.6\Omega,$ $V_{CC}=200\text{V}$		2.5		μs
Fall Time	t_f	$I_C=3\text{A}, I_{B1}=0.6\text{A},$ $I_{B2}=-1.2\text{A}, R_L=66.6\Omega,$ $V_{CC}=200\text{V}$		0.3		μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)

