Ordering number:EN3975

NPN Epitaxial Planar Silicon Transistor

2SC4736

High h_{FE}, Low-Frequency General-Purpose Amplifier Applications

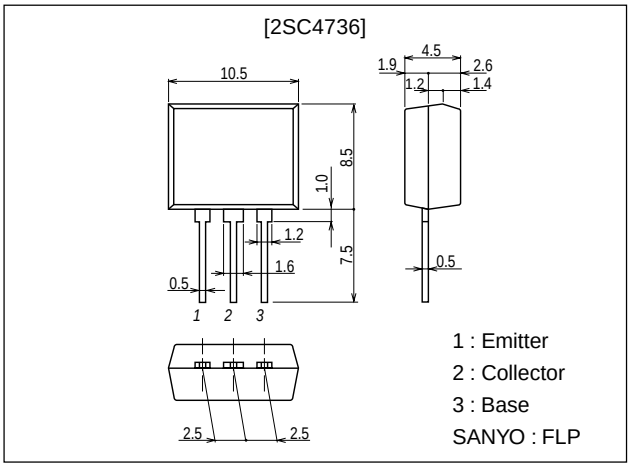
Features

- Large current (I_C=2A).
- Adoption of MBIT process.
- High DC current gain (h_{FE}=800 to 3200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}$≤0.5V).
- High emitter-to-base voltage (V_{EBO}≥15V).
- Large power type such as P_C=1.5W when used without heatsink.
- It is possible to make appliances more compact because its height on board is 9.5mm.
- Effective in automatic inserting and counting stocked amount because of being provided for radial taping.

Package Dimensions

unit:mm

2084B



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		80	V
Collector-to-Emitter Voltage	V_{CEO}		60	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Base Current	I_B		400	mA
Collector Dissipation	P_C		1.5	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

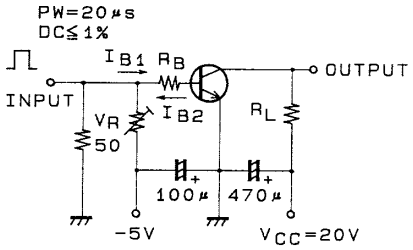
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=50V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=10V, I_C=0			1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=500mA	800	1500	3200	
	$h_{FE}2$	V_{CE}=5V, I_C=1A	600			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		170		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		24		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1A, I_B=20mA		0.2	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=1A, I_B=20mA		0.87	1.2	V

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_C=10μA, I_C=0	15			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.23		μs
Strage Time	t_{stg}	See specified Test Circuit.		2.7		μs
Fall Time	t_f	See specified Test Circuit.		0.75		μs

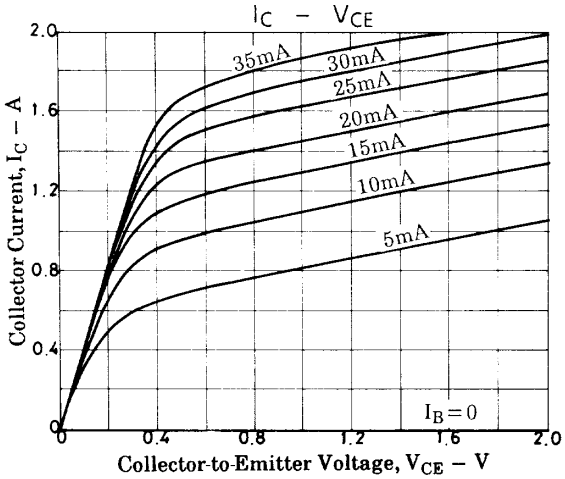
Switching Time Test Circuit

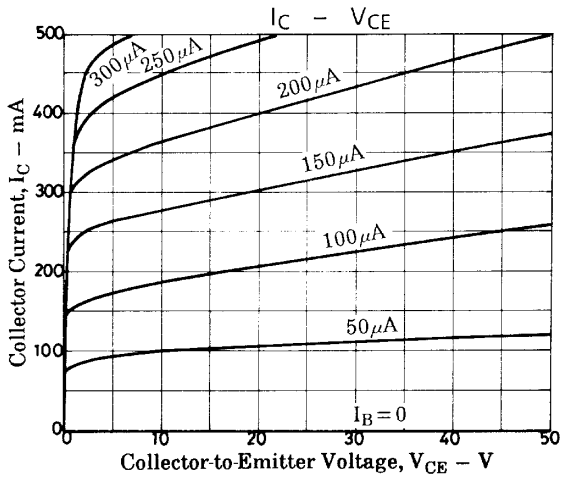


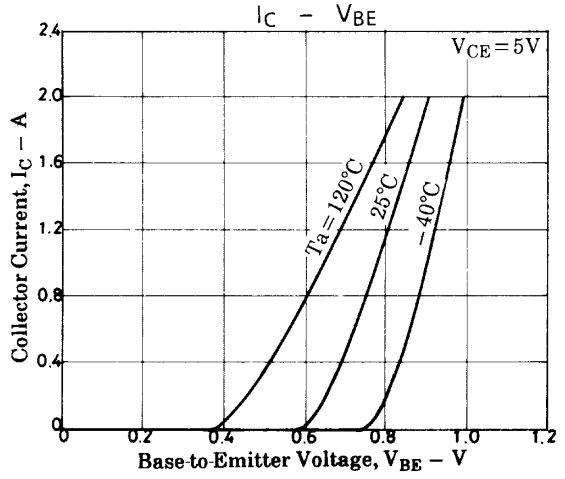
A00467

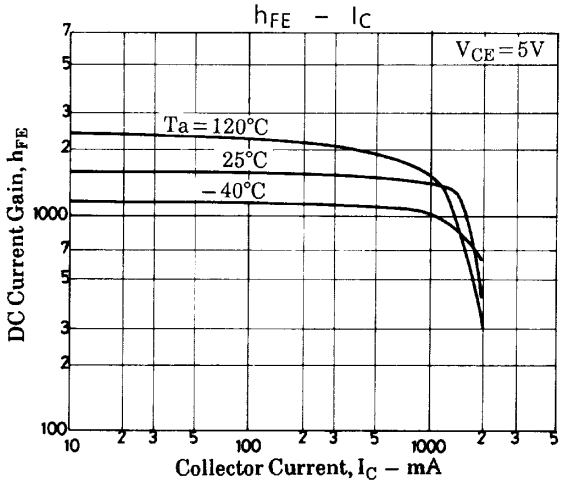
$100I_B1 = -100I_B2 = I_C = 700mA$

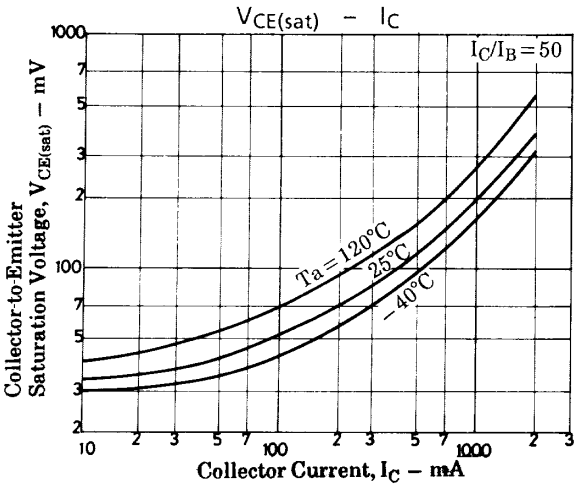
Unit (resistance: Ω, capacitance: F)

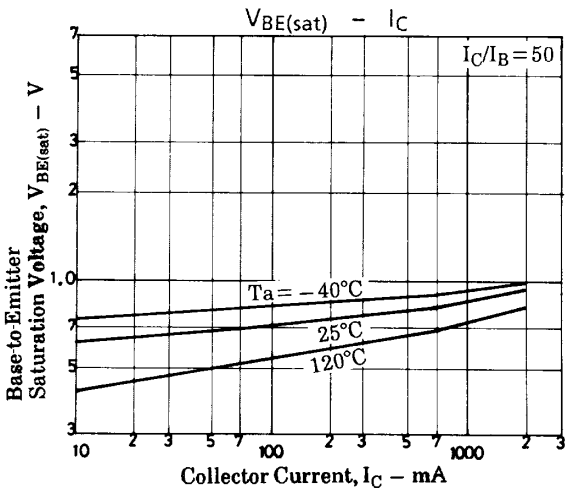


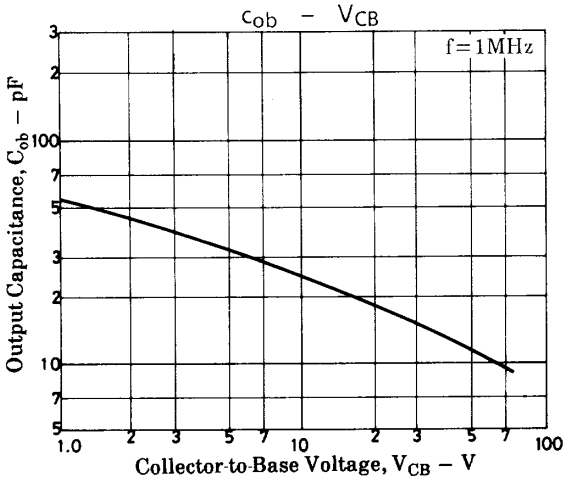


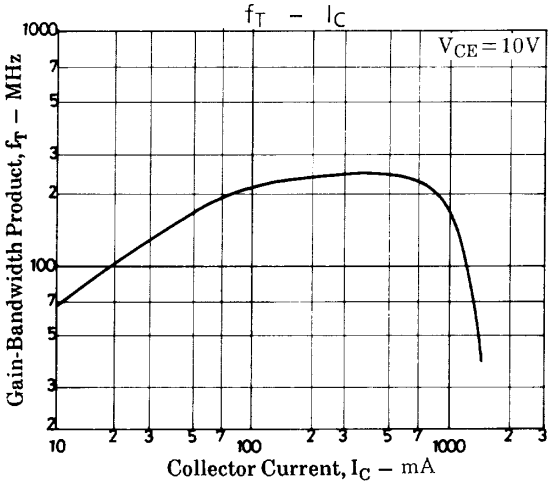


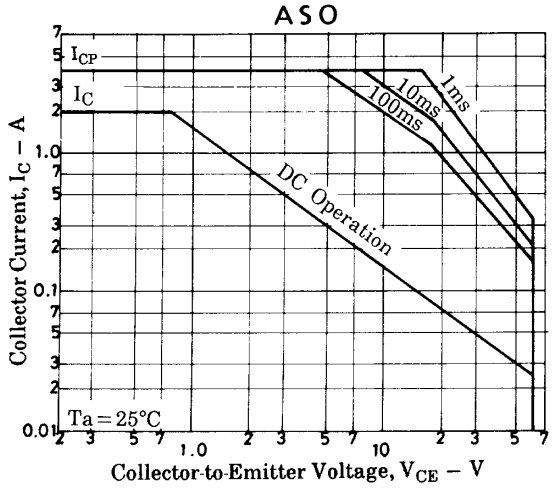


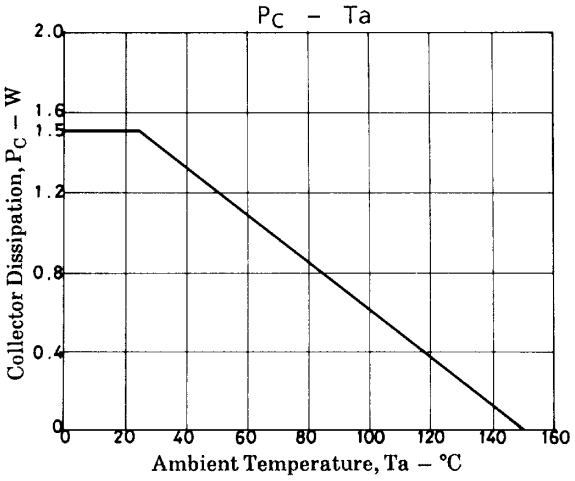

VCE(sat) – IC
IC/IB=50
Ta=120°C
25°C
–40°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA


VBE(sat) – IC
IC/IB=50
Ta=–40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – mA


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V


fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA


ASO
ICP
IC
1ms
10ms
100ms
DC Operation
Ta=25°C
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V


PC – Ta
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C