Ordering number:EN2468

PNP/NPN Epitaxial Planar Silicon Transistors

2SB1296/2SD1936

AF Amplifier Applications

Applications

· AF power amplifier, medium-speed switching, small-sized motor drivers.

Features

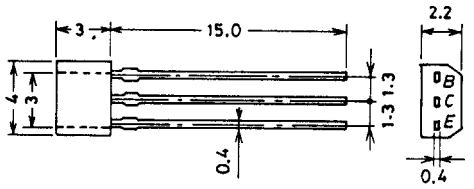
· Large current capacity.
· Low collector to emitter saturation voltage.
· Wide ASO.

Package Dimensions

unit:mm

2033

[2SB1296/2SD1936]



B : Base
C : Collector
E : Emitter
SANYO : SPA

( ) : 2SB1296

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)15	V
Collector-to-Emitter Voltage	V_{CEO}		(–)15	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)0.8	A
Collector Current (Pulse)	I_{CP}		(–)3	A
Collector Dissipation	P_C		300	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

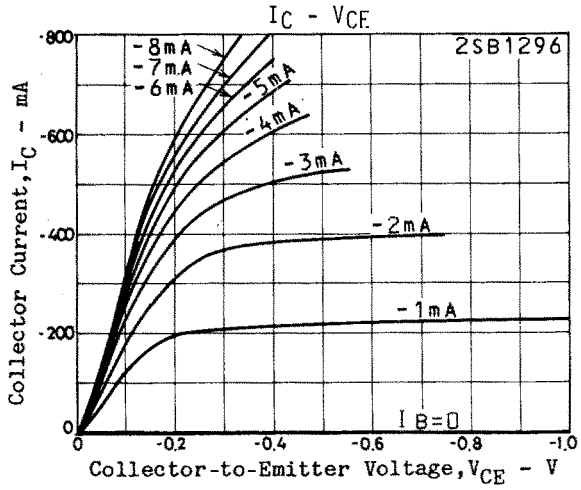
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)12V, I_E=0			(–)100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)100	nA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)50mA	140*		(560)*	
					800*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)800mA	80			

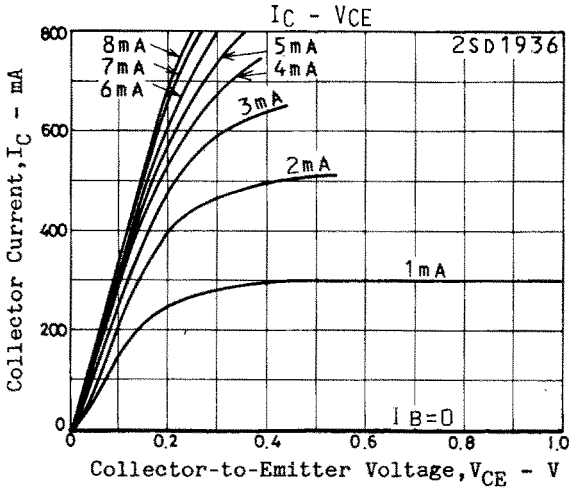
* : The 2SB1296/2SD1936 are classified by 50mA h_{FE} as follows :

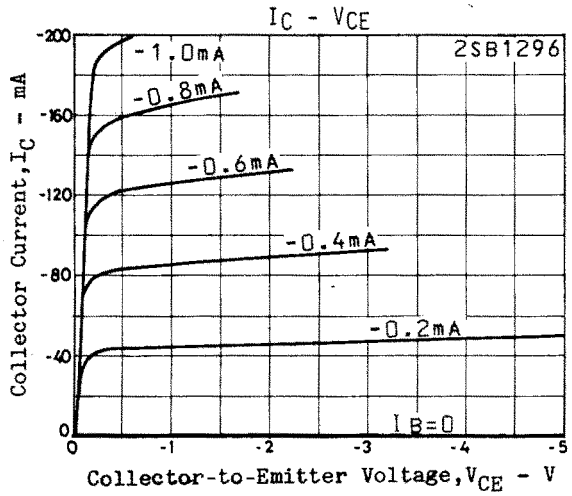
2SB1296	140	S	280	200	T	400	280	U	560			
2SB1936	140	S	280	200	T	400	280	U	560	400	V	800

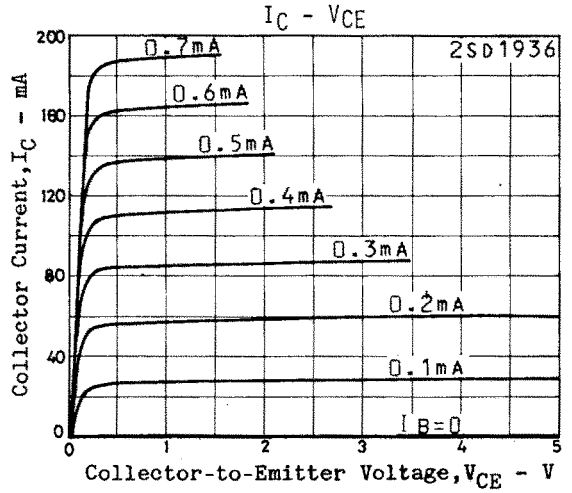
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

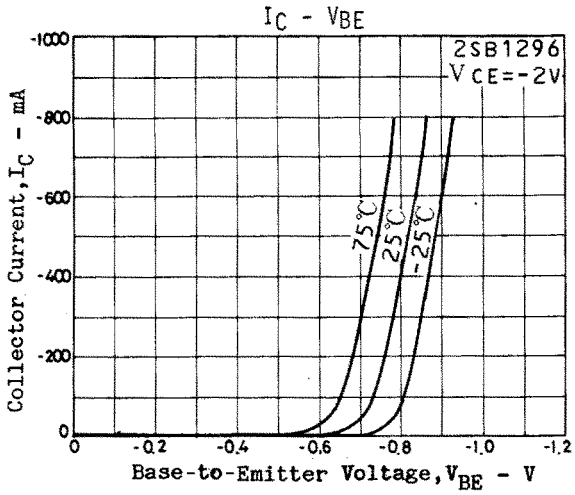
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	V_{CE}=(–)2V, I_C=(–)50mA		(300)		MHz
				200		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(15)		pF
				10		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}1$	I_C=(–)5mA, I_B=(–)0.5mA		(–)10	(–)25	mV
	$V_{CE(sat)}2$	I_C=(–)400mA, I_B=(–)20mA		(–)100	(–)200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)400mA, I_B=(–)20mA		(–)0.9	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V

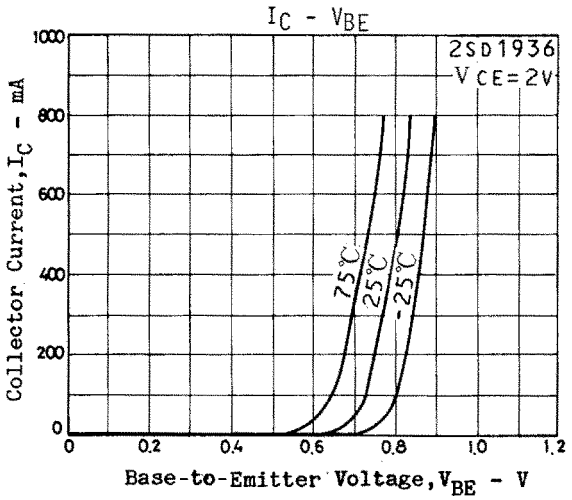


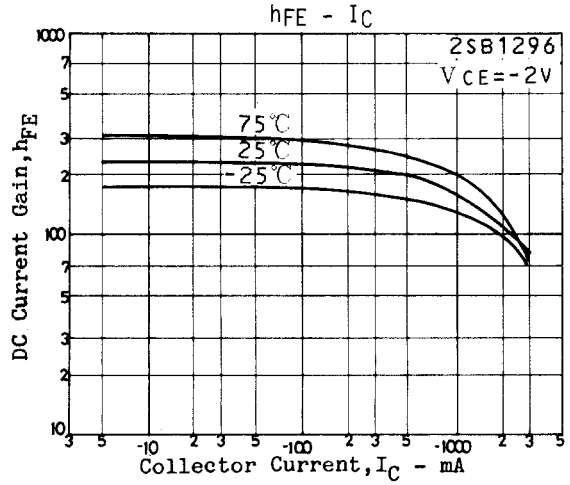


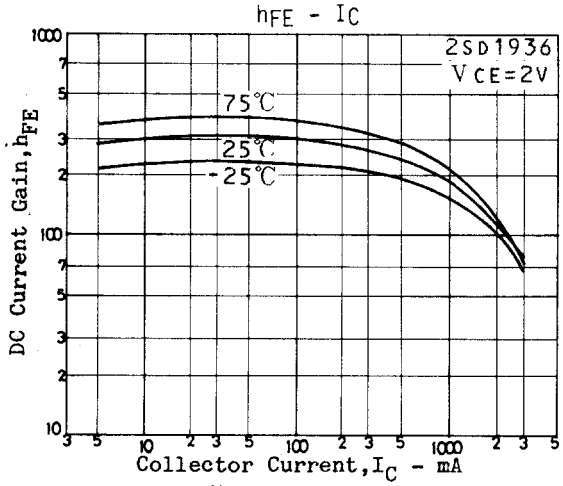


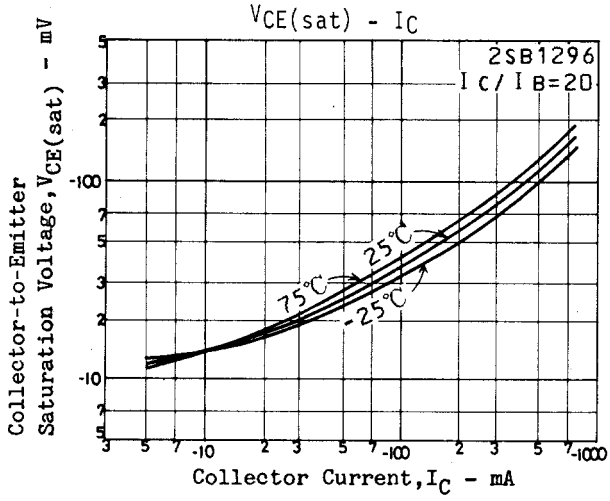


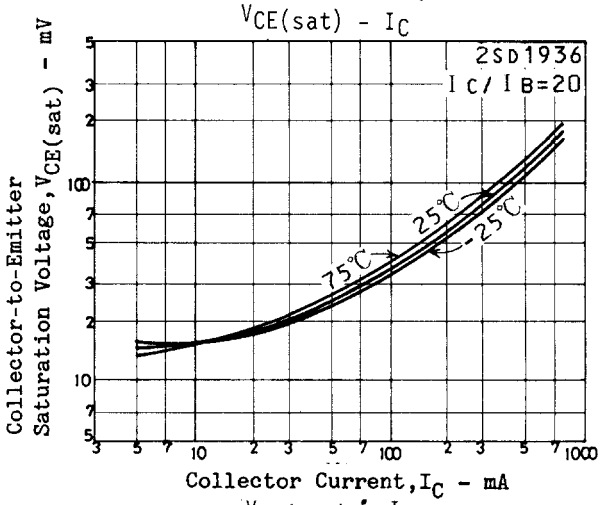


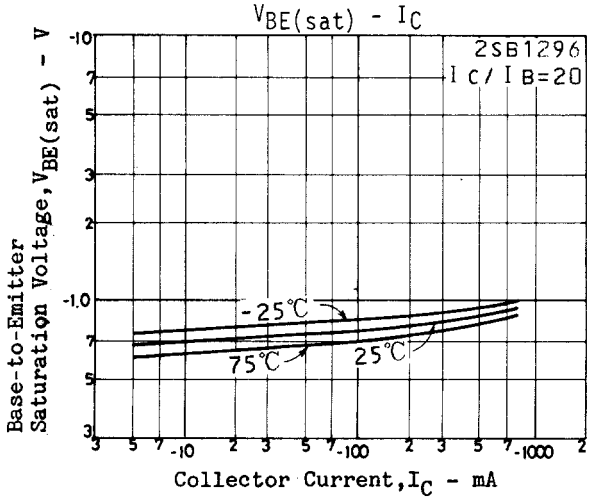


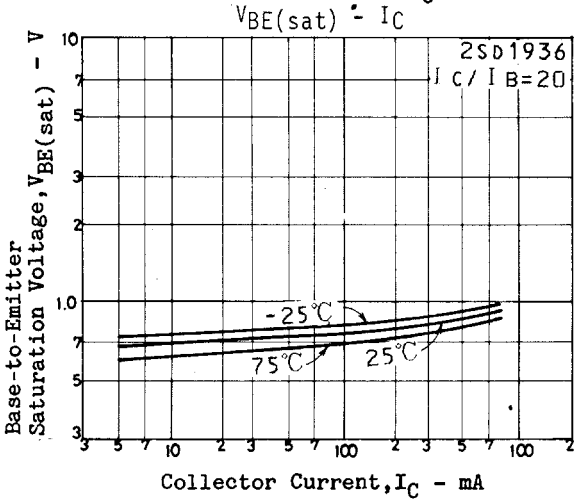

hFE - IC
2SB1296
VCE=-2V
75℃
25℃
-25℃
DC Current Gain, hFE
Collector Current, IC - mA

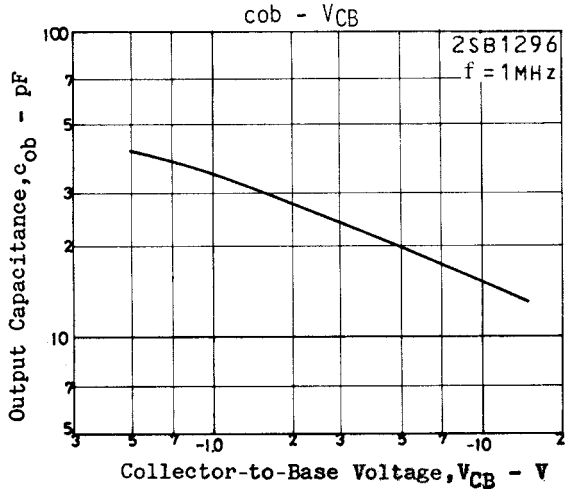

hFE - IC
2SD1936
VCE=2V
75℃
25℃
-25℃
DC Current Gain, hFE
Collector Current, IC - mA

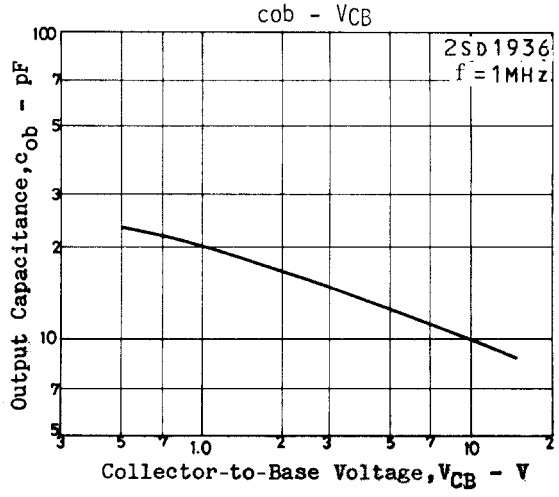

VCE(sat) - IC
2SB1296
IC/IB=20
75℃
25℃
-25℃
Collector-to-Emitter Saturation Voltage, VCE(sat) - mV
Collector Current, IC - mA

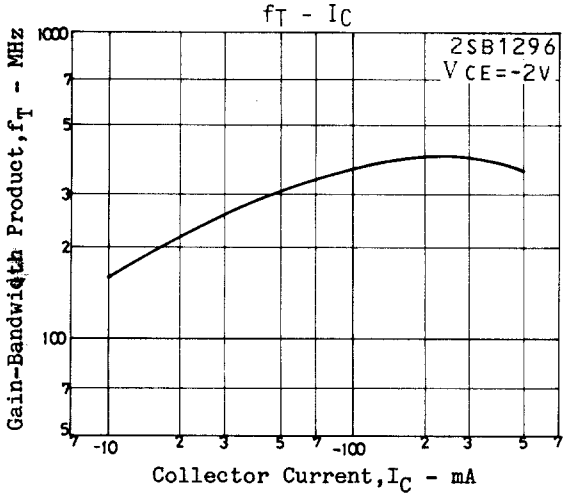

VCE(sat) - IC
2SD1936
IC/IB=20
75℃
25℃
-25℃
Collector-to-Emitter Saturation Voltage, VCE(sat) - mV
Collector Current, IC - mA

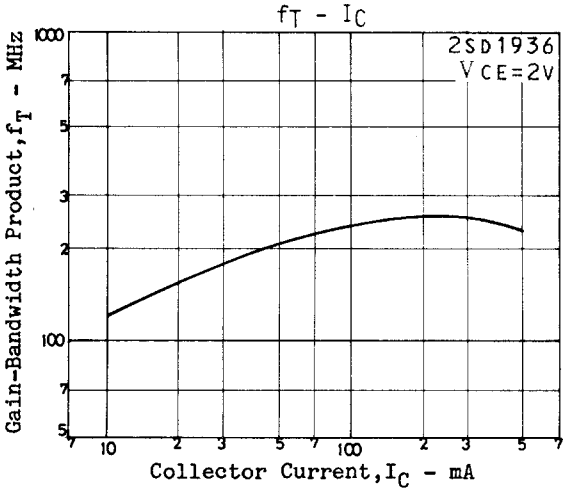

VBE(sat) - IC
2SB1296
IC/IB=20
-25℃
75℃
25℃
Base-to-Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA

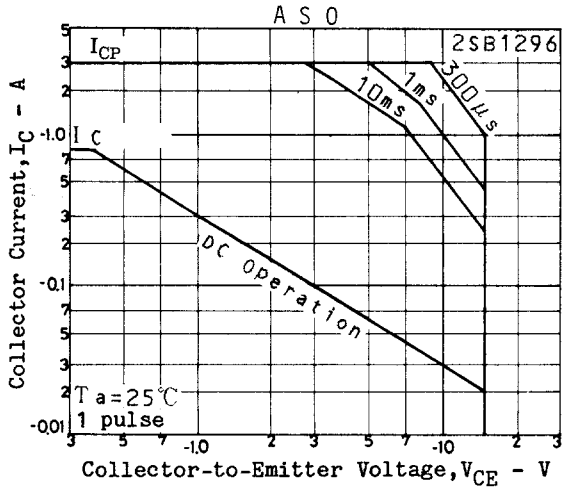

VBE(sat) - IC
2SD1936
IC/IB=20
-25℃
75℃
25℃
Base-to-Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA

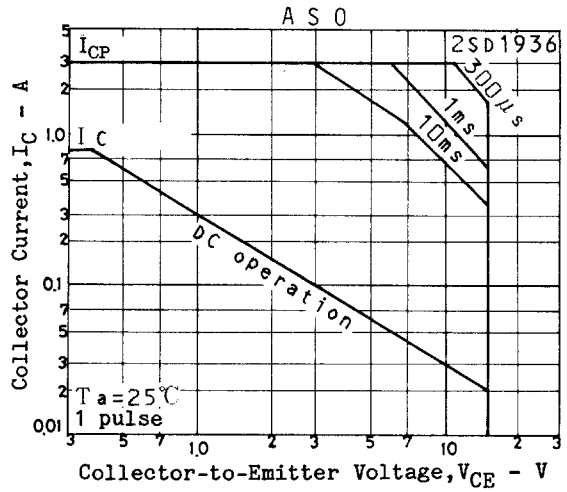

cob - VCB
2SB1296
f=1MHz
Output Capacitance, cob - pF
Collector-to-Base Voltage, VCB - V

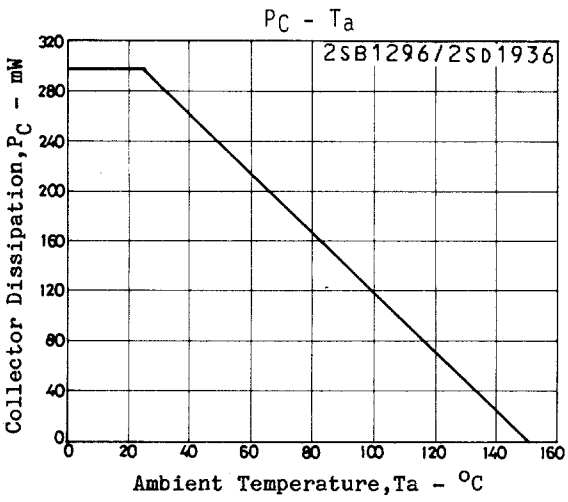

cob - VCB
2SD1936
f=1MHz
Output Capacitance, cob - pF
Collector-to-Base Voltage, VCB - V


fT - IC
2SB1296
VCE=-2V
Gain-Bandwidth Product,fT - MHz
Collector Current,IC - mA


fT - IC
2SD1936
VCE=2V
Gain-Bandwidth Product,fT - MHz
Collector Current,IC - mA


A S O
2SB1296
ICP
IC
10ms
1ms
300μs
DC operation
Ta=25℃
1 pulse
Collector Current,IC - A
Collector-to-Emitter Voltage,VCE - V


A S O
2SD1936
ICP
IC
300μs
1ms
10ms
DC operation
Ta=25℃
1 pulse
Collector Current,IC - A
Collector-to-Emitter Voltage,VCE - V


PC - Ta
2SB1296/2SD1936
Collector Dissipation,PC - mW
Ambient Temperature,Ta - °C