Ordering number:678F

2SB776 : PNP Epitaxial Planar Silicon Transistor
2SD896 : NPN Triple Diffused Planar Silicon Transistor

2SB776/2SD896

100V/7A, AF 40W Output Applications

Features

- Capable of being mounted easily because of one-point fixing type plastic molded package (Interchangeable with TO-3).
- Wide ASO because of on-chip ballast resistance.
- Goode dependence of f_T on current and excellent high frequency responce.

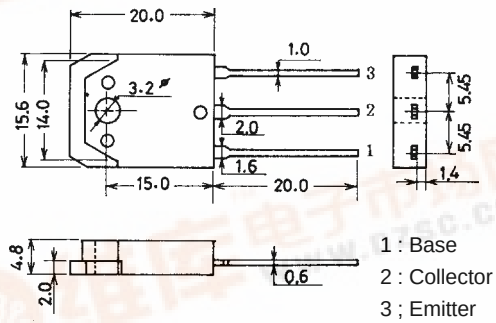
The descriptions in parentheses are for the 2SB776 only ; other descriptions than those in parentheses are common to the 2SB776 and 2SD896.

Package Dimensions

unit:mm

2022A

[2SB776/2SD896]



SANYO : TO-3PB

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)120	V
Collector-to-Emitter Voltage	V_{CEO}		(–)100	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)7	A
Collector Current (Pulse)	I_{CP}		(–)11	A
Collector Dissipation	P_C	Tc=25˚C	70	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}=(–)80V, I_E=0			(–)0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)0.1	mA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)5V, I_C=(–)1A	60*		200*	
	$h_{FE}2$	V_{CE}=(–)5V, I_C=(–)4A	20			
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)1A		15		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(200)		pF
				140		pF
Base-to-Emitter Voltage	V_{BE}	V_{CE}=(–)5V, I_C=(–)1A			(–)1.5	V

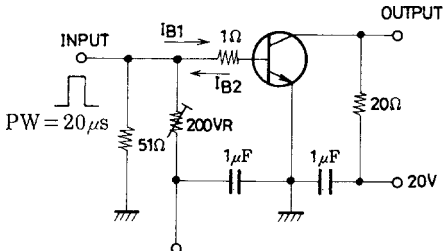
* : The 2SB776/2SD896 are classified by 1A h_{FE} as follows :

60	D	120	100	E	200

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

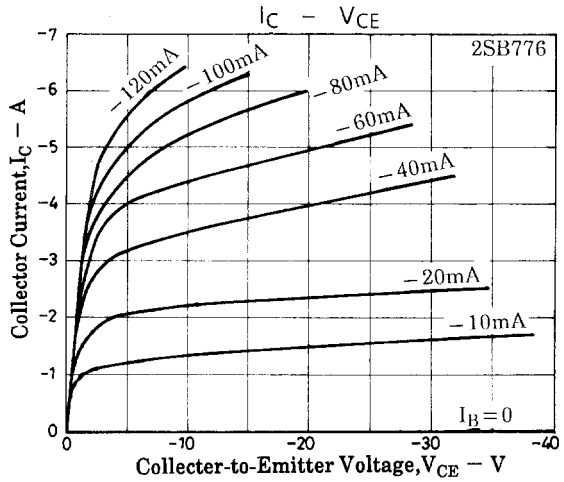
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)4A, I_B=(–)0.4A		(–0.9)	2.0	V
				0.6		V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)5mA, I_E=0	(–)120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)5mA, R_{BE}=∞	(–)100			V
		I_C=(–)50mA, R_{BE}=∞	(–)100			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	I_E=(–)5mA, I_C=0	(–)6			V
Turn-ON TIme	t_{on}	See specified Test Circuit		(0.2)		µs
				0.2		µs
Storage Time	t_{stg}	See specified Test Circuit		(0.3)		µs
				0.6		µs
Fall Time	t_f	See specified Test Circuit		(1.2)		µs
				6.0		µs

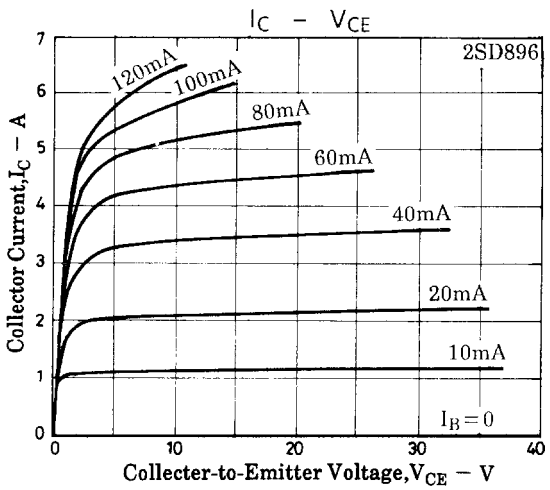
Switching Time Test Circuit

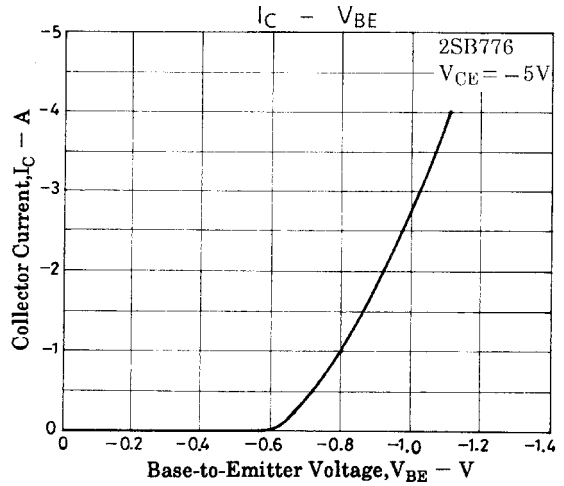


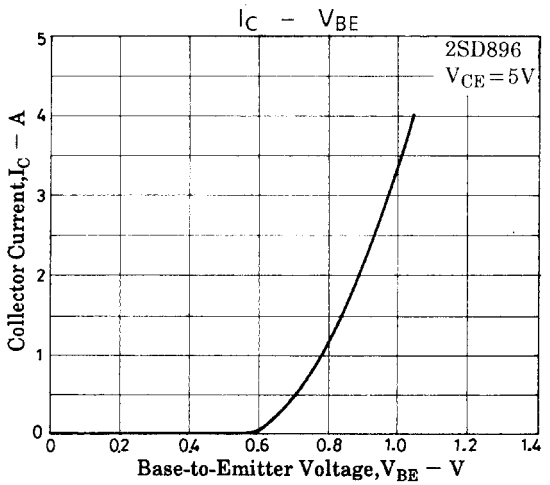
$10I_{B1} = -10I_{B2} = I_C = 1A$

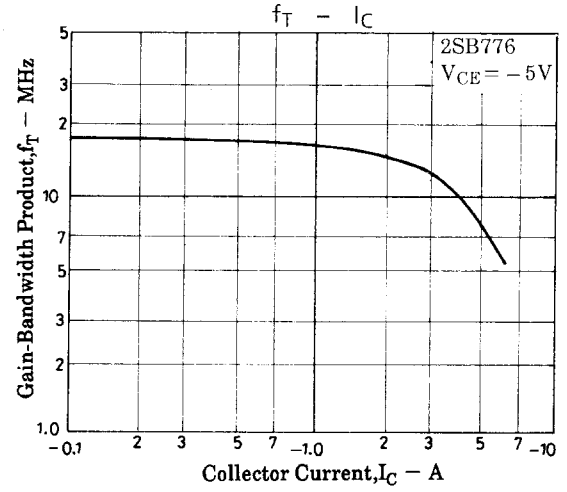
(For PNP, the polarity is reversed.)

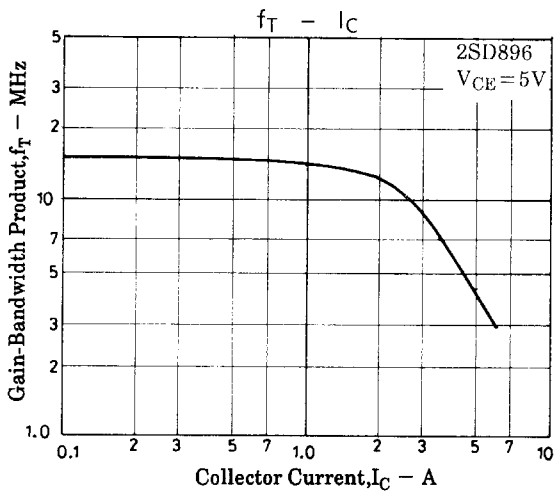


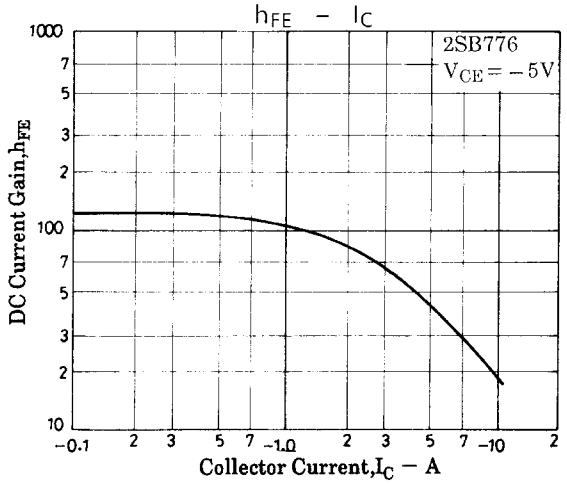


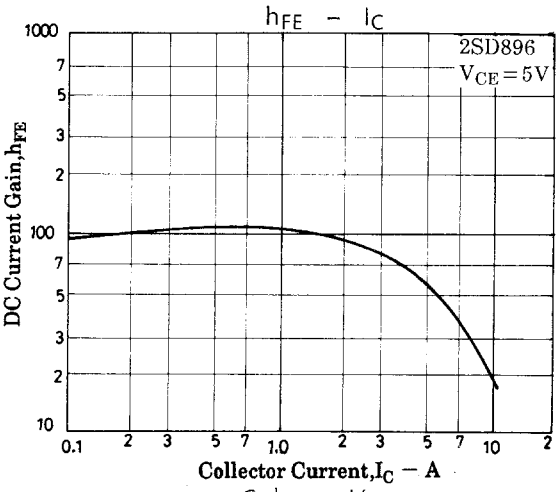


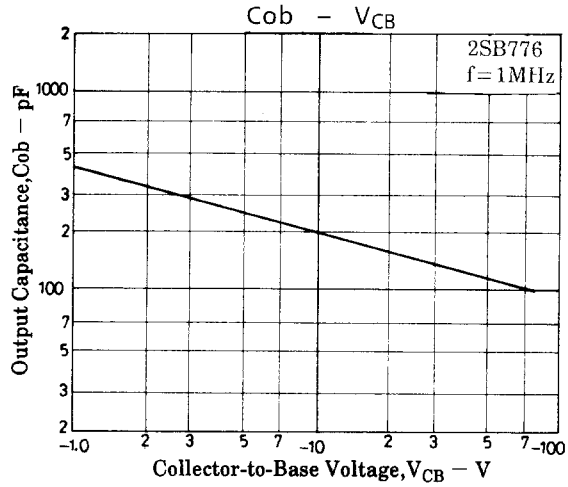


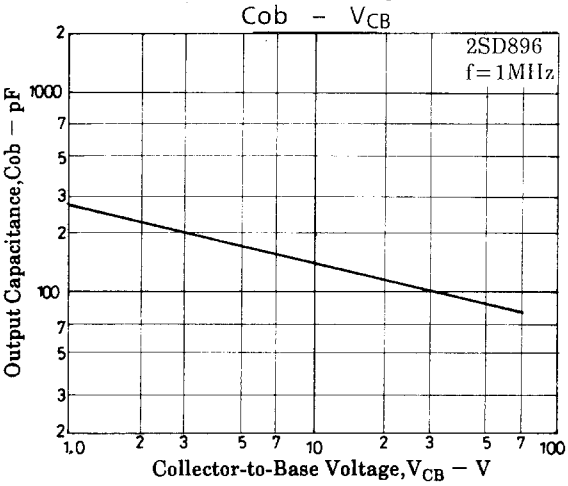

f_T – I_C
2SB776
V_{CE} = –5V
Gain-Bandwidth Product,f_T – MHz
Collector Current,I_C – A

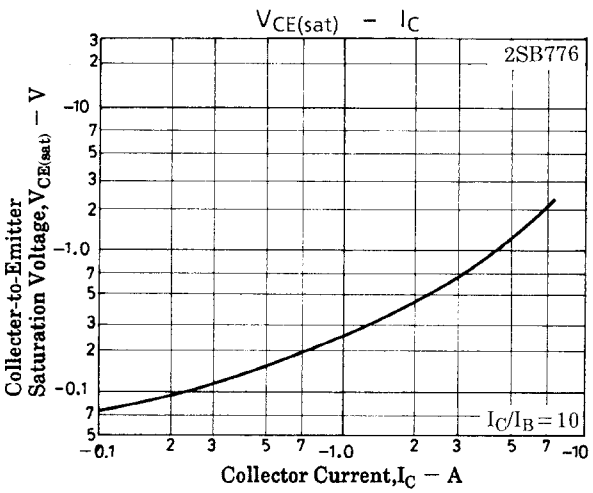

f_T – I_C
2SD896
V_{CE} = 5V
Gain-Bandwidth Product,f_T – MHz
Collector Current,I_C – A

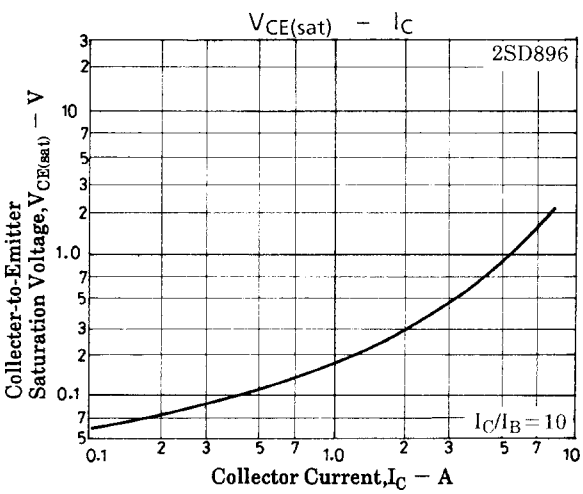

h_{FE} – I_C
2SB776
V_{CE} = –5V
DC Current Gain,h_{FE}
Collector Current,I_C – A


h_{FE} – I_C
2SD896
V_{CE} = 5V
DC Current Gain,h_{FE}
Collector Current,I_C – A


Cob – V_{CB}
2SB776
f = 1MHz
Output Capacitance,Cob – pF
Collector-to-Base Voltage,V_{CB} – V


Cob – V_{CB}
2SD896
f = 1MHz
Output Capacitance,Cob – pF
Collector-to-Base Voltage,V_{CB} – V


$V_{CE(sat)}$ – I_C
2SB776
I_C/I_B = 10
Collecter-to-Emitter Saturation Voltage,$V_{CE(sat)}$ – V
Collector Current,I_C – A


$V_{CE(sat)}$ – I_C
2SD896
I_C/I_B = 10
Collecter-to-Emitter Saturation Voltage,$V_{CE(sat)}$ – V
Collector Current,I_C – A