



2SB776/2SD896

100V/7A, AF 40W Output Applications

Features

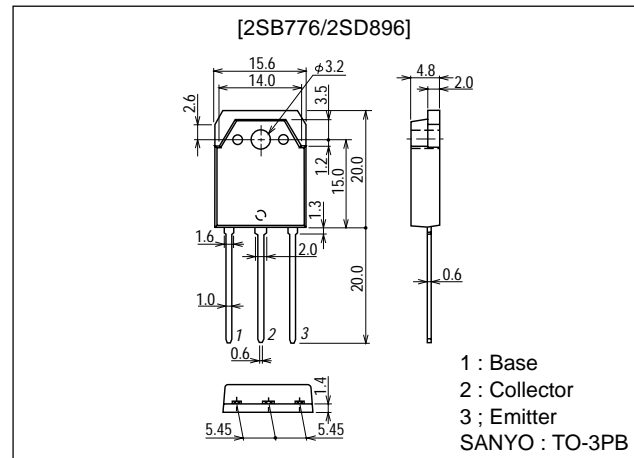
- Capable of being mounted easily because of one-point fixing type plastic molded package (Interchangeable with TO-3).
- Wide ASO because of on-chip ballast resistance.
- Good dependence of f_T on current and excellent high frequency response.

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



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)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	$T_c=25^\circ\text{C}$	70	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)80\text{V}, I_E=0$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	mA
DC Current Gain	h_{FE1}	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$	60*		200*	
	h_{FE2}	$V_{CE}=(-)5\text{V}, I_C=(-)4\text{A}$	20			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		15		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(200)		pF
				140		pF
Base-to-Emitter Voltage	V_{BE}	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$			(-)1.5	V

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

Rank	D	E
h_{FE}	60 to 120	100 to 200

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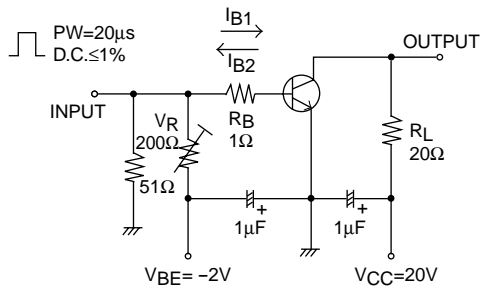
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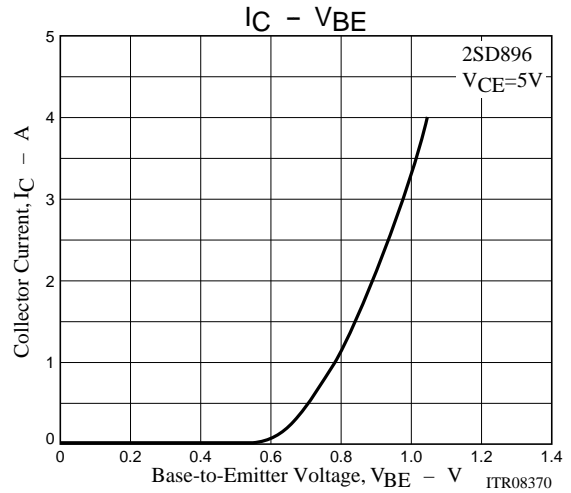
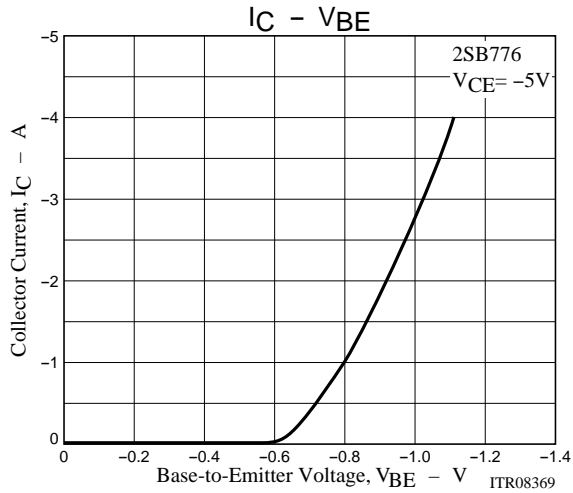
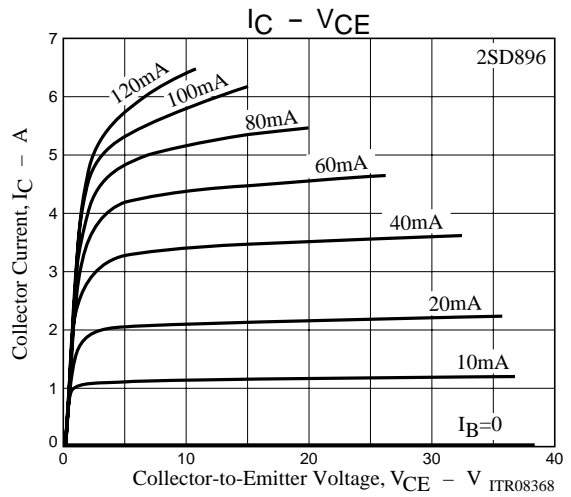
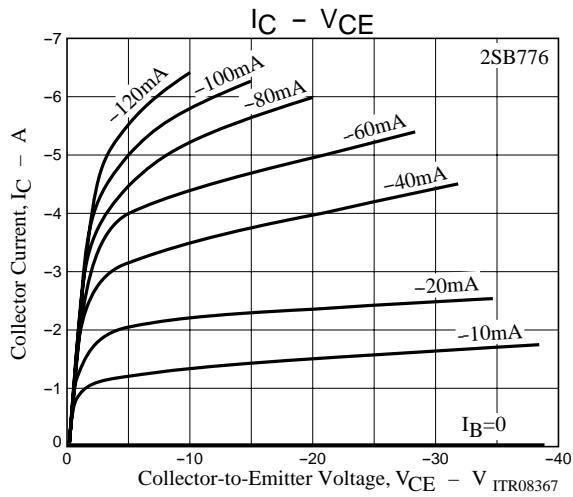
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)4A, I_B=(-)0.4A$		(-0.9)	2.0	V
				0.6		V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	(-)120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)5mA, R_{BE}=\infty$	(-)100			V
		$I_C=(-)50mA, R_{BE}=\infty$	(-)100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)5mA, I_C=0$	(-)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

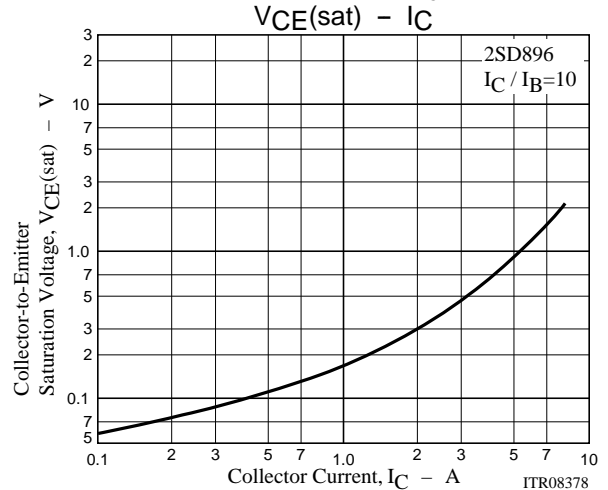
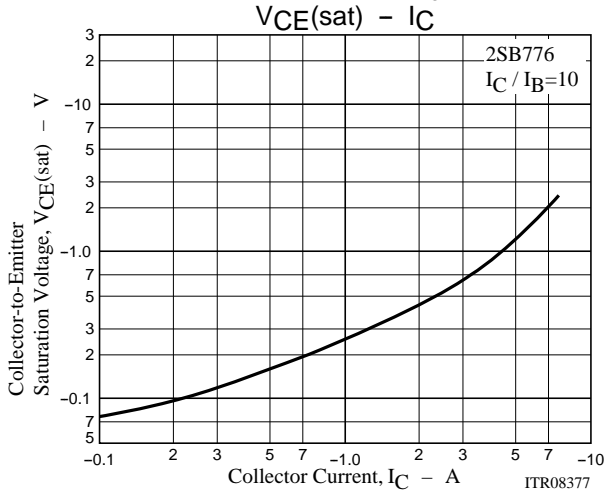
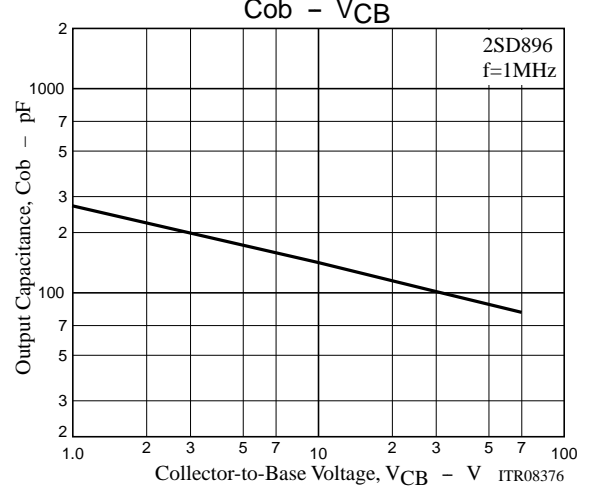
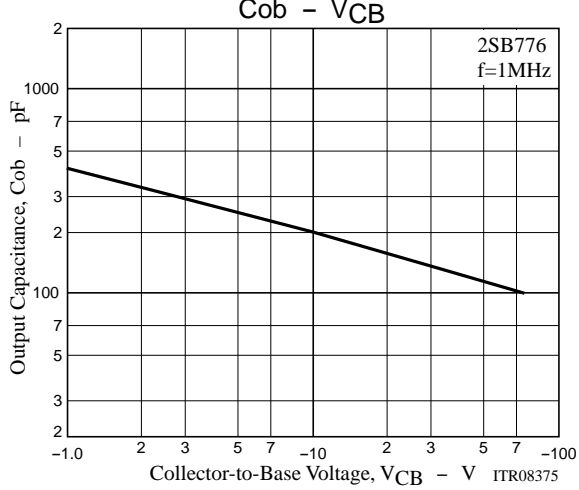
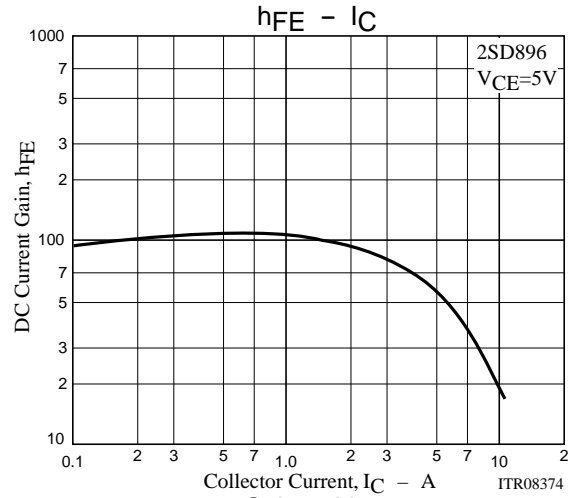
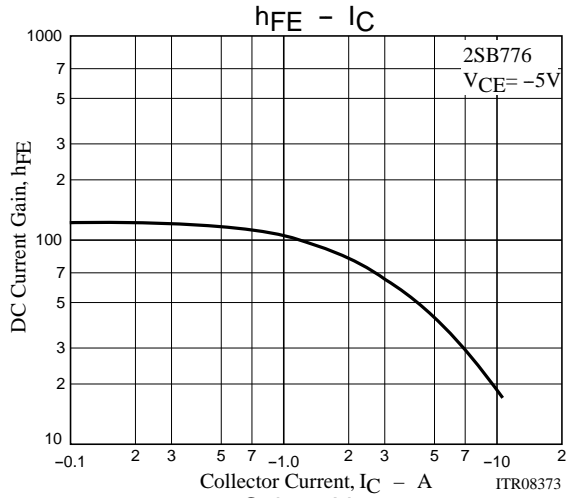
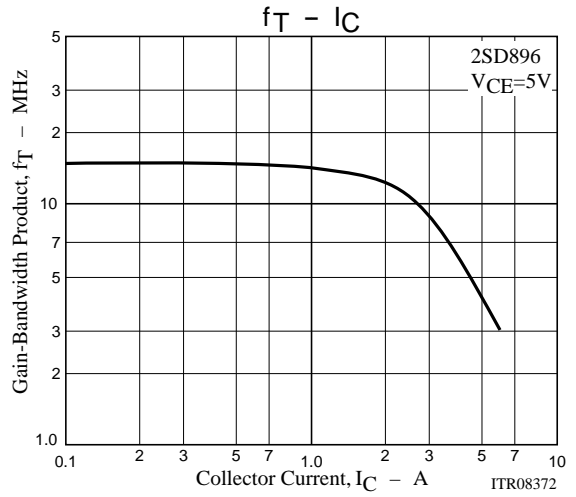
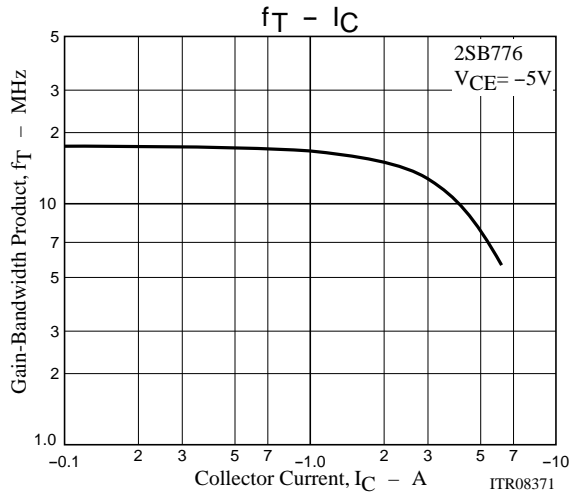
Switching Time Test Circuit



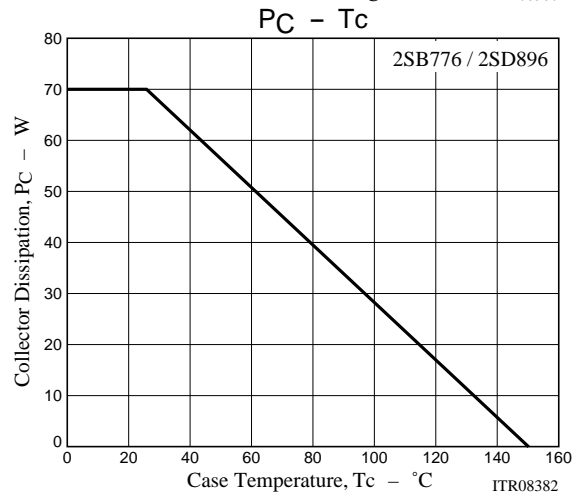
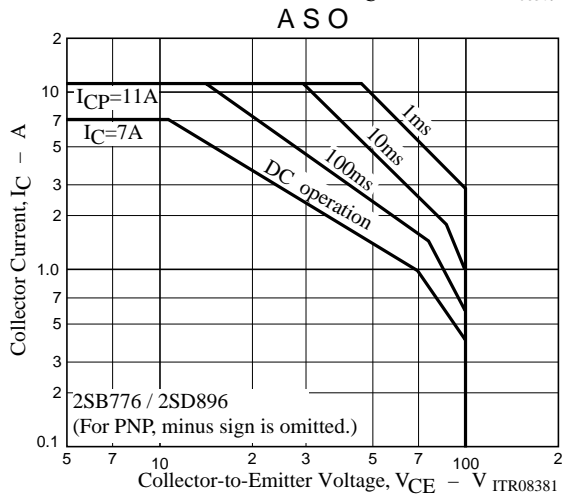
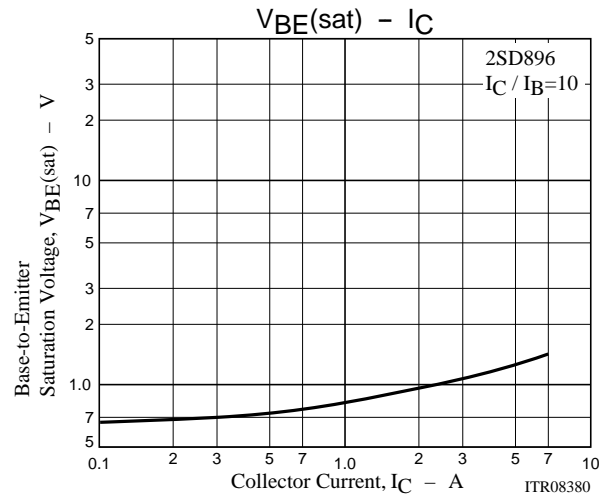
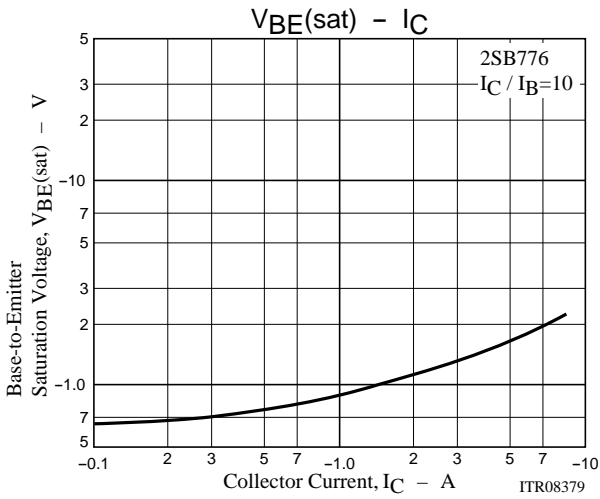
$I_C=10I_{B1} = -10I_{B2}=1A$
(For PNP, the polarity is reversed.)



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