



## 2SB816/2SD1046

For LF Power Amplifier, 50W Output  
Large Power Switching Applications

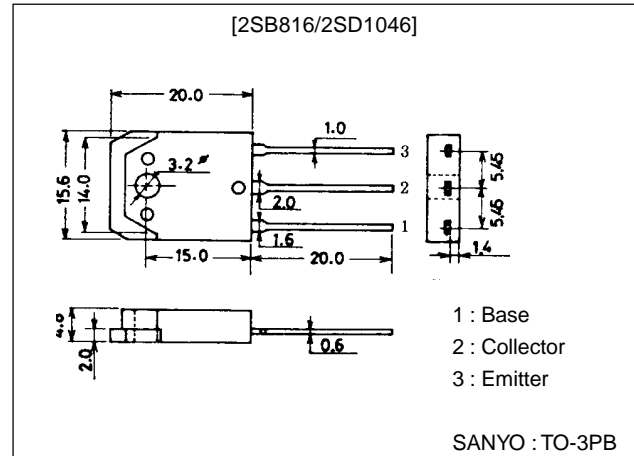
### Features

- Capable of being mounted easily because of one-point fixing type plastic molded package (Interchangeable with TO-3).
- Wide ASO because of built-in ballast resistance.
- Good dependence of  $f_T$  on current and good HF characteristic.

### Package Dimensions

unit:mm

2022A



() : 2SB816

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-150)	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-120)	V
Emitter-to-Base Voltage	$V_{EBO}$		(-6)	V
Collector Current	$I_C$		(-8)	A
Collector Current (Pulse)	$I_{CP}$		(-12)	A
Collector Dissipation	$P_C$	$T_c=25^\circ\text{C}$	80	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-40 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*	
	$h_{FE2}$	$V_{CE}=(-)5\text{V}, I_C=(-)5\text{A}$	20			
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		15		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(220)		pF
				160		pF

\* : The 2SB816/2SD1046 are classified by 1A  $h_{FE}$  as follows :

60	D	120	100	E	200
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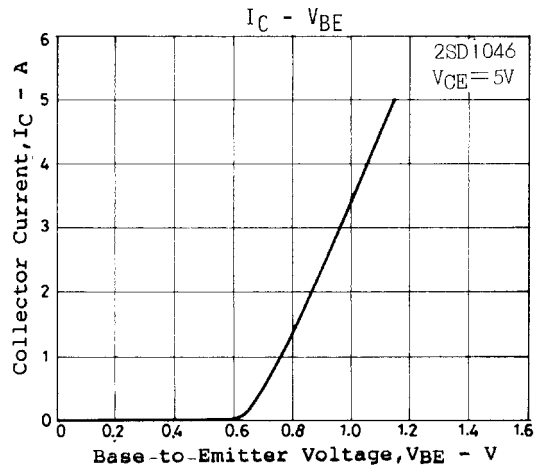
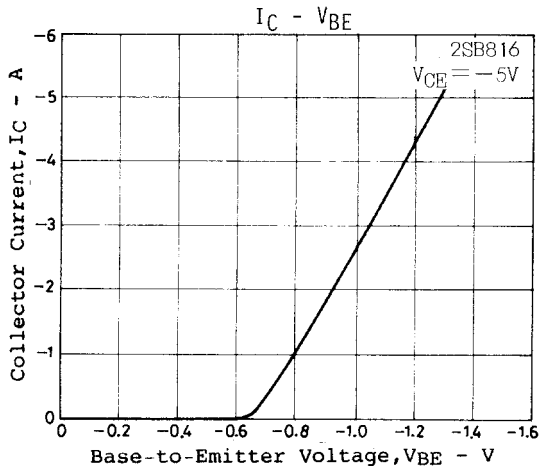
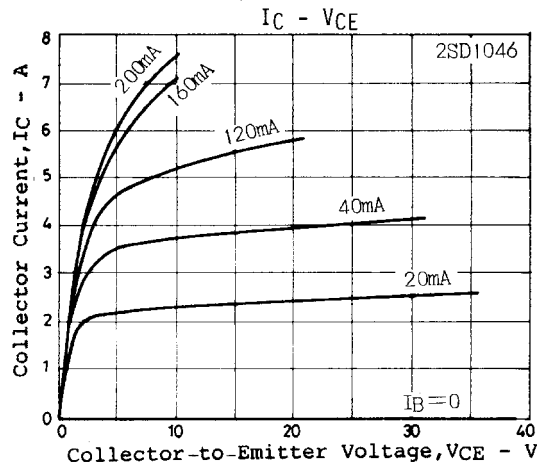
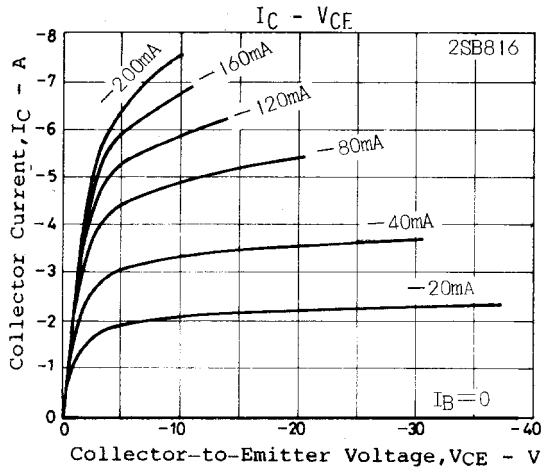
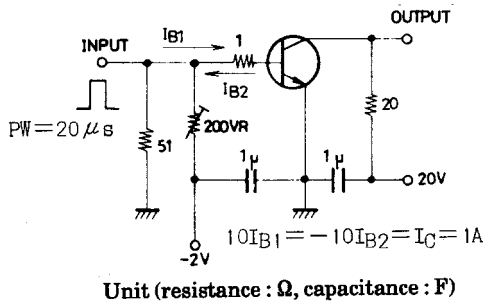
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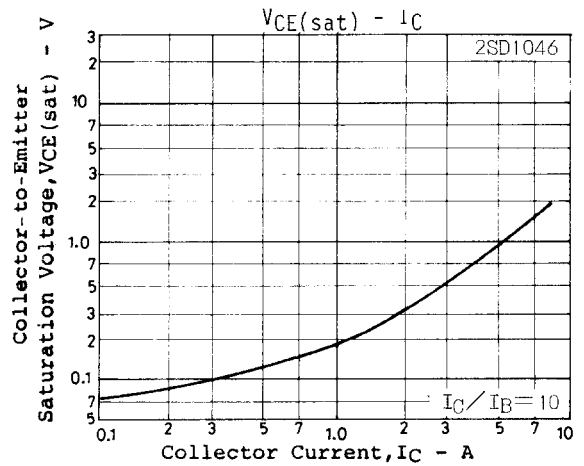
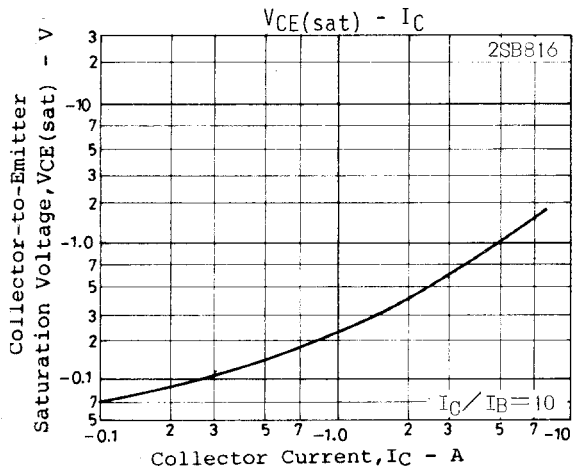
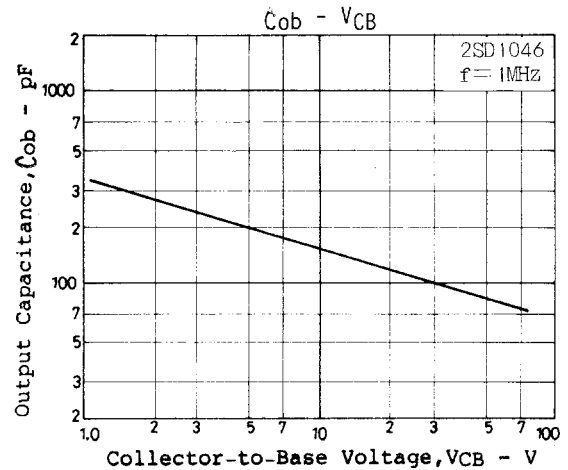
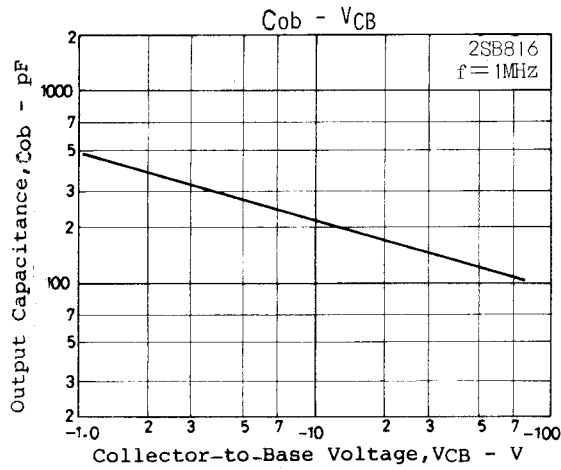
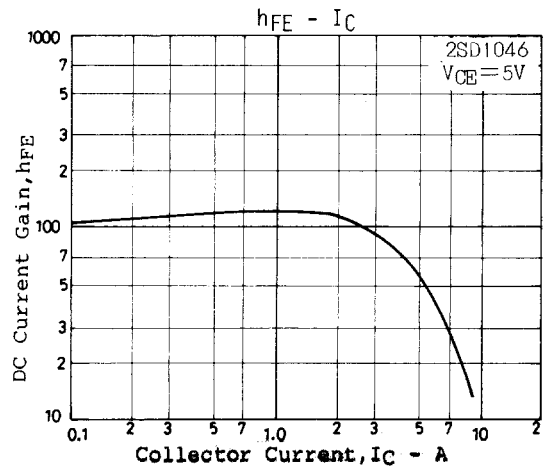
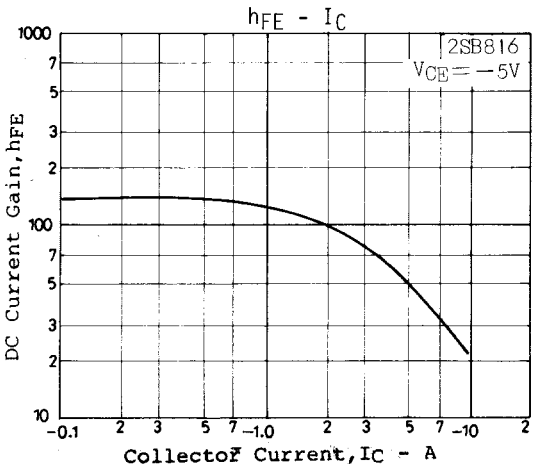
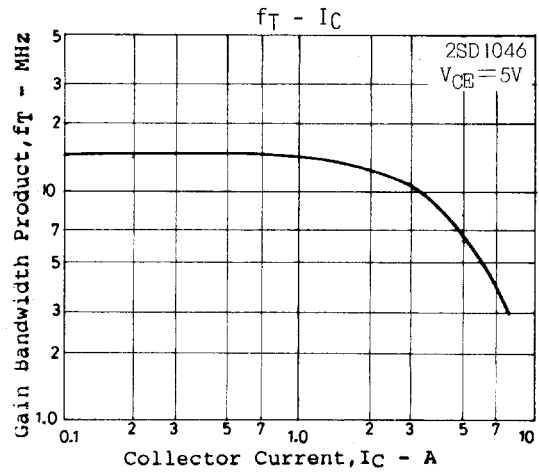
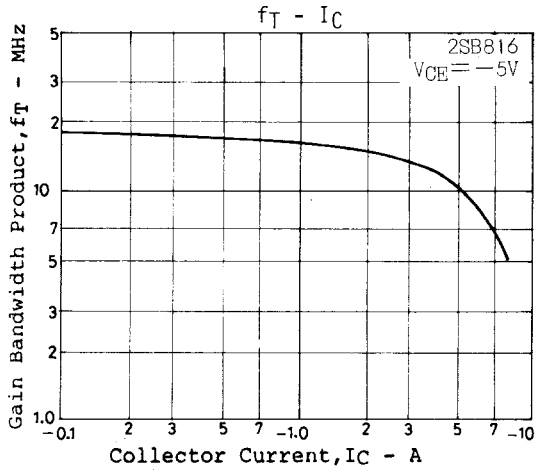
# 2SB816/2SD1046

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Base-to-Emitter Voltage	$V_{BE}$	$V_{CE}=(-)5V, I_C=(-)1A$			1.5	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)5A, I_B=(-)0.5A$		1.0	2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	(-)150			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)5mA, R_{BE}=\infty$	(-)120			V
		$I_C=(-)50mA, R_{BE}=\infty$	(-)120			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.		(0.22)		$\mu s$
					0.22	
Fall Time	$t_f$	See specified test circuit.		(0.37)		$\mu s$
					1.02	
Storage Time	$t_{stg}$	See specified test circuit.		(0.93)		$\mu s$
					6.66	

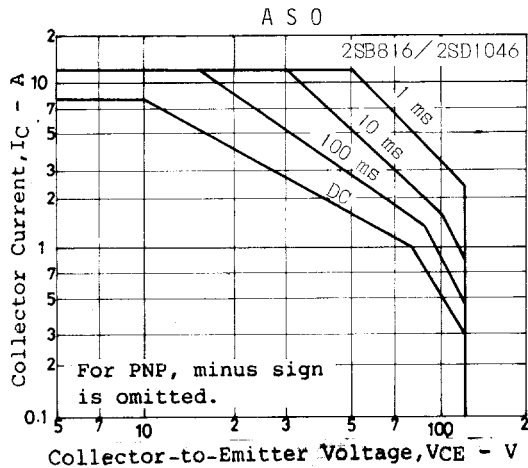
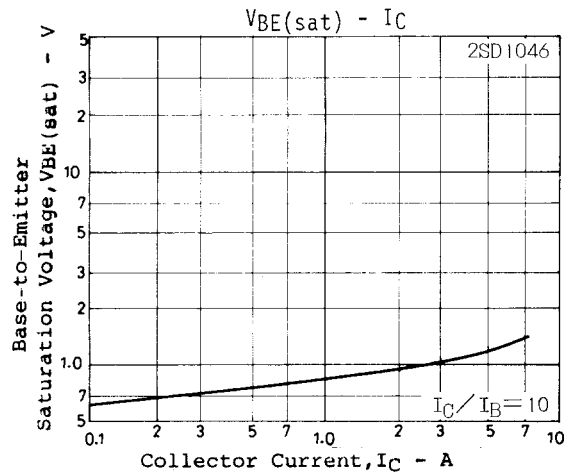
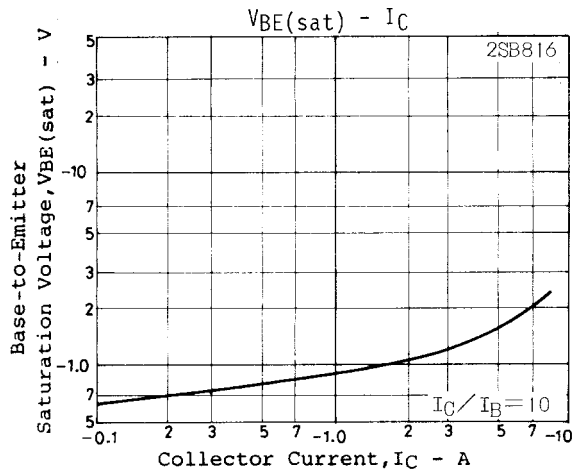
## Swicthing Time Test Circuit



# 2SB816/2SD1046



## 2SB816/2SD1046



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