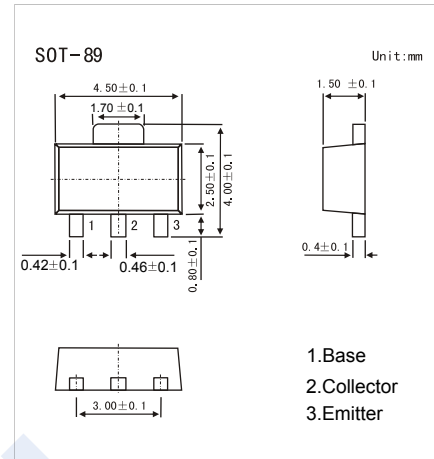


## PNP Transistors

### 2SB1302

#### ■ Features

- Low collector-to-emitter saturation voltage.
- Large current capacity.
- Fast switching speed.



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	-25	V
Collector - Emitter Voltage	$V_{CE0}$	-20	
Emitter - Base Voltage	$V_{EB0}$	-5	
Collector Current - Continuous	$I_C$	-5	A
Collector Current - Pulse	$I_{CP}$	-8	
Collector Power Dissipation	$P_C$	1.3	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature range	$T_{stg}$	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = -100 \mu\text{A}$ , $I_E = 0$	-25			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = -1 \text{ mA}$ , $R_{BE} = \infty$	-20			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = -100 \mu\text{A}$ , $I_C = 0$	-5			
Collector-base cut-off current	$I_{CB0}$	$V_{CB} = -20\text{V}$ , $I_E = 0$			-0.5	$\mu\text{A}$
Emitter cut-off current	$I_{EB0}$	$V_{EB} = -4\text{V}$ , $I_C = 0$			-0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3 \text{ A}$ , $I_B = -60 \text{ mA}$		-0.25	-0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -6 \text{ A}$ , $I_B = -60 \text{ mA}$		-1	-1.3	
DC current gain	$h_{FE}$	$V_{CE} = -2\text{V}$ , $I_C = -500 \text{ mA}$	100		400	
		$V_{CE} = -2\text{V}$ , $I_C = -4 \text{ A}$	60			
Turn-ON Time	$t_{on}$	See specified Test Circuit.		40		ns
Storage Time	$t_{stg}$			200		
Fall Time	$t_f$			10		
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$		60		$\mu\text{F}$
Transition frequency	$f_T$	$V_{CE} = -5\text{V}$ , $I_C = -200 \text{ mA}$		320		MHz

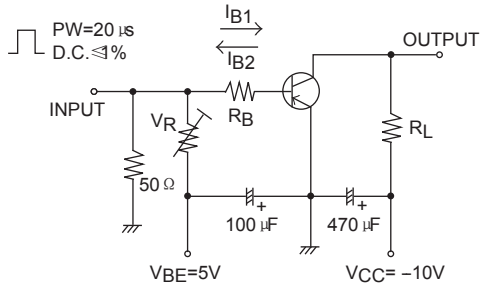
#### ■ Classification of $h_{fe(1)}$

Type	2SB1302-R	2SB1302-S	2SB1302-T
Range	100-200	140-280	200-400
Marking	BJ R*	BJ S*	BJ T*

### PNP Transistors

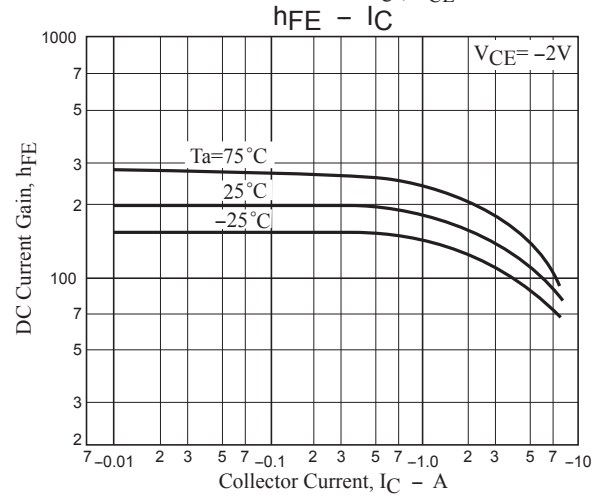
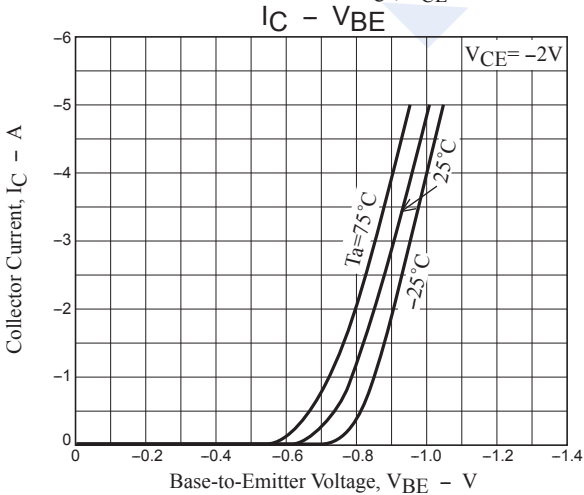
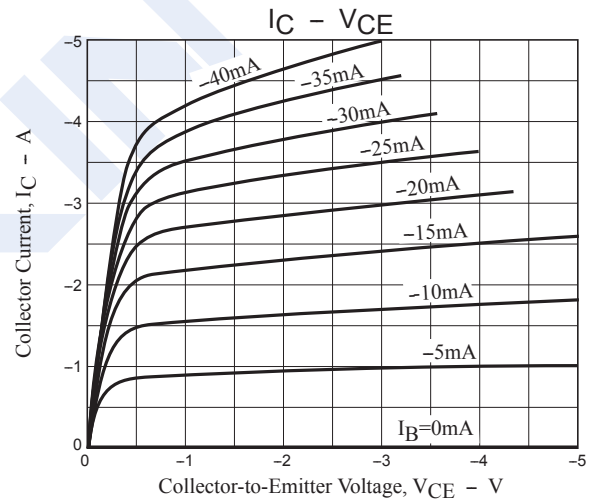
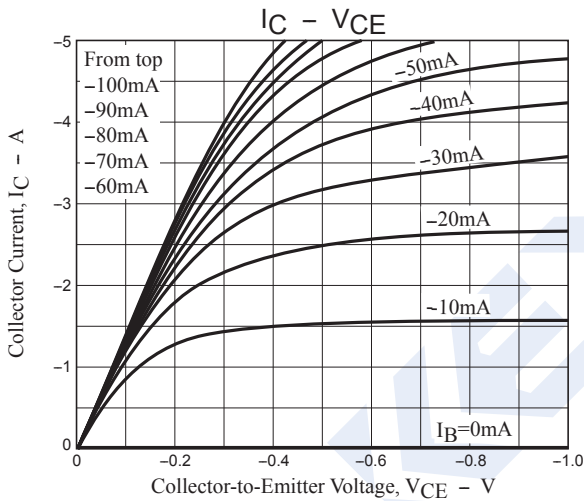
### 2SB1302

#### Switching Time Test Circuit



$$I_C = 10I_{B1} = -10I_{B2} = -2A$$

#### Typical Characteristics



### PNP Transistors

### 2SB1302

■ Typical Characteristics

