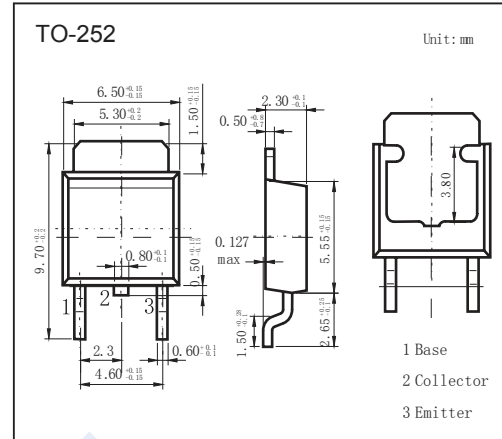


PNP Transistors

2SB1667



■ Features

- Low saturation voltage
- Audio Frequency Power Amplifier Applications

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

Parameter	Symbol	Rating	Unit	
Collector - Base Voltage	V_{CB0}	-60	V	
Collector - Emitter Voltage	V_{CE0}	-60		
Emitter - Base Voltage	V_{EB0}	-7		
Collector Current - Continuous	I_C	-3	A	
Base current	I_B	-0.5		
Collector Power Dissipation	P_C	$T_c = 25^\circ\text{C}$	25	W
		$T_a = 25^\circ\text{C}$	1.5	
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}	$I_C = -100 \mu\text{A}$, $I_E = 0$	-60			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = -5 \text{ mA}$, $I_B = 0$	-60			
Emitter - base breakdown voltage	V_{EB0}	$I_E = -100 \mu\text{A}$, $I_C = 0$	-7			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -60 \text{ V}$, $I_E = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -7 \text{ V}$, $I_C = 0$			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3 \text{ A}$, $I_B = -300 \text{ mA}$		-0.5	-1.7	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -3 \text{ A}$, $I_B = -300 \text{ mA}$			-1.2	
Base - emitter voltage	V_{BE}	$V_{CE} = -5 \text{ V}$, $I_C = -500 \text{ mA}$		-0.7	-1	
DC current gain	$h_{FE(1)}$	$V_{CE} = -5 \text{ V}$, $I_C = -500 \text{ mA}$	60		300	
	$h_{FE(2)}$	$V_{CE} = -5 \text{ V}$, $I_C = -3 \text{ A}$	20			
Turn-on time	t_{on}	See specified Test Circuit		0.4		us
Storage time	t_{stg}			1.7		
Fall time	t_f			0.5		
Collector output capacitance	C_{ob}	$V_{CB} = -10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		150		pF
Transition frequency	f_T	$V_{CE} = -5 \text{ V}$, $I_C = -500 \text{ mA}$		9		MHz

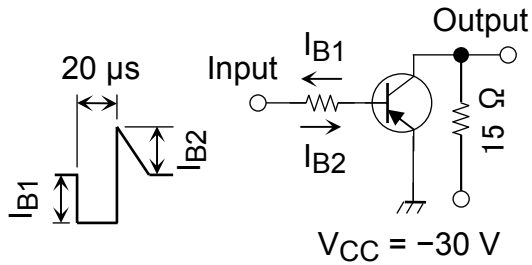
■ Classification of $h_{FE(1)}$

Type	2SB1667-O	2SB1667-Y	2SB1667-GR
Range	60-120	100-200	150-300

PNP Transistors

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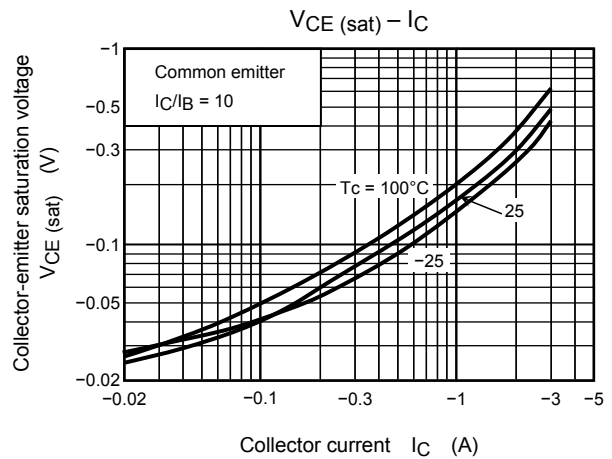
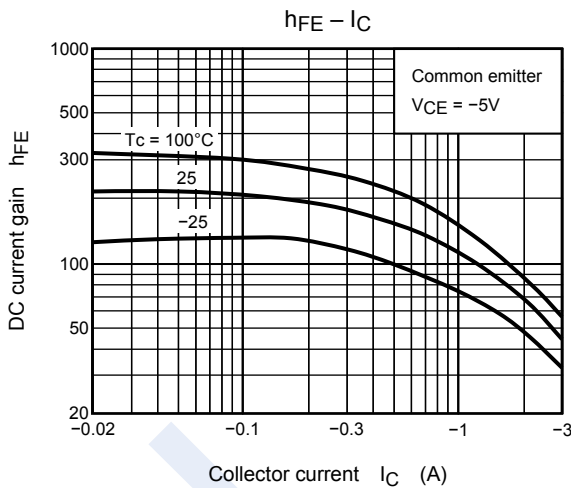
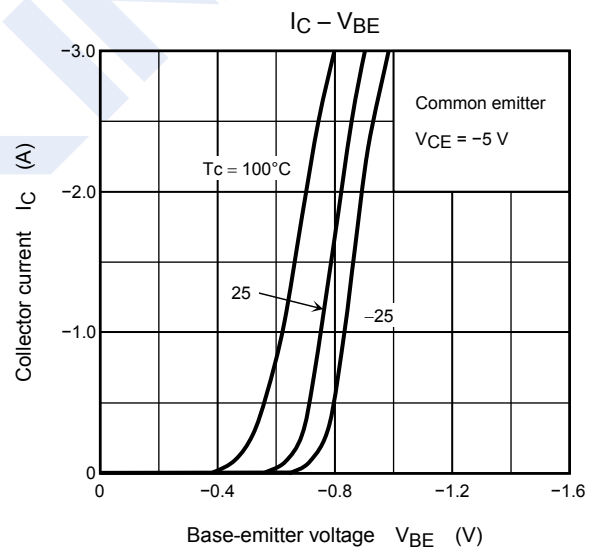
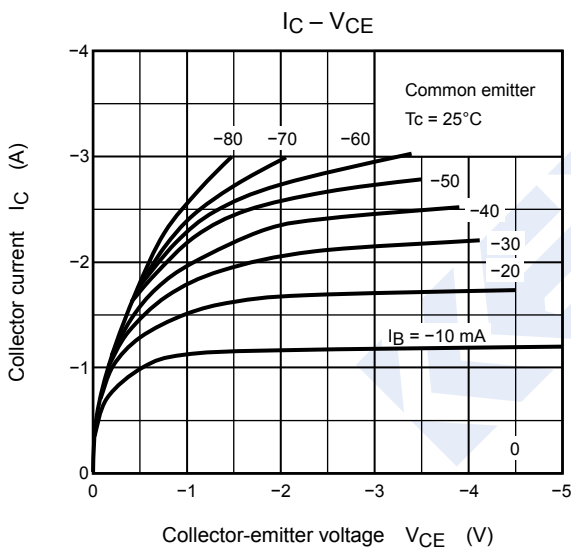
Switching Time Test Circuit



$I_{B1} = 0.2 \text{ A}, I_{B2} = 0.2 \text{ A},$

duty cycle $\leq 1\%$

■ Typical Characteristics



PNP Transistors

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■ Typical Characteristics

