

# 2SB1317

## Silicon PNP triple diffusion planar type

For high power amplification

Complementary to 2SD1975

### Features

- Satisfactory forward current transfer ratio  $h_{FE}$  vs. collector current  $I_C$  characteristics
- Wide area of safe operation (ASO)
- High transition frequency  $f_T$
- Optimum for the output stage of a HiFi audio amplifier

### Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

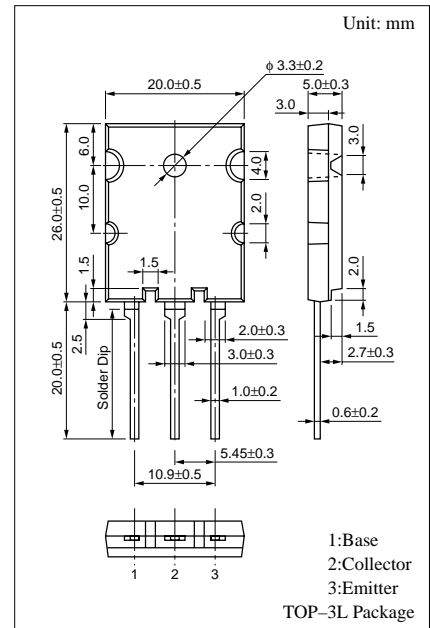
Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-180	V
Collector to emitter voltage	$V_{CEO}$	-180	V
Emitter to base voltage	$V_{EBO}$	-5	V
Peak collector current	$I_{CP}$	-25	A
Collector current	$I_C$	-15	A
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	150
		$T_a=25^\circ\text{C}$	3.5
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

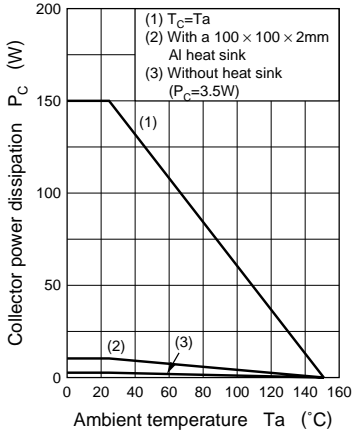
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -180\text{V}, I_E = 0$			-50	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -3\text{V}, I_C = 0$			-50	$\mu\text{A}$
Forward current transfer ratio	$h_{FE1}$	$V_{CE} = -5\text{V}, I_C = -20\text{mA}$	20			
	$h_{FE2}^*$	$V_{CE} = -5\text{V}, I_C = -1\text{A}$	60		200	
	$h_{FE3}$	$V_{CE} = -5\text{V}, I_C = -8\text{A}$	20			
Base to emitter voltage	$V_{BE}$	$V_{CE} = -5\text{V}, I_C = -8\text{A}$			-1.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{A}, I_B = -1\text{A}$			-2.5	V
Transition frequency	$f_T$	$V_{CE} = -5\text{V}, I_C = -0.5\text{A}, f = 1\text{MHz}$		20		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		450		pF

\* $h_{FE2}$  Rank classification

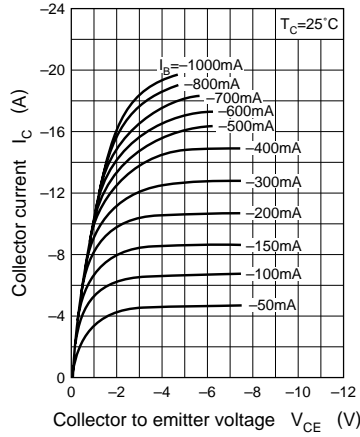
Rank	Q	S	P
$h_{FE2}$	60 to 120	80 to 160	100 to 200



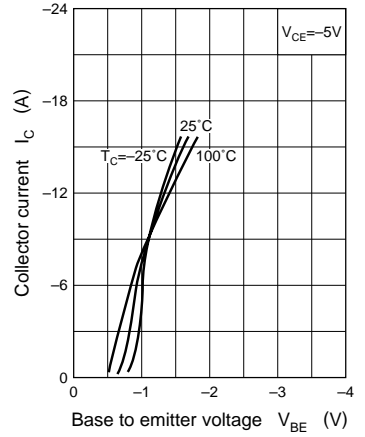
$P_C - T_a$



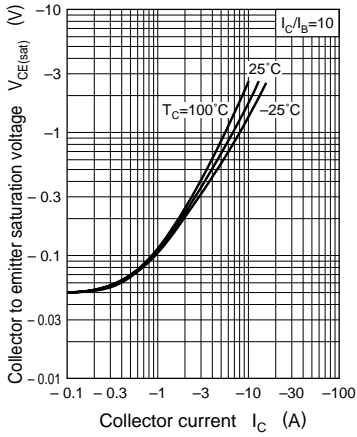
$I_C - V_{CE}$



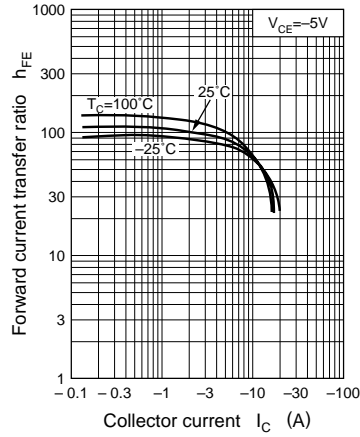
$I_C - V_{BE}$



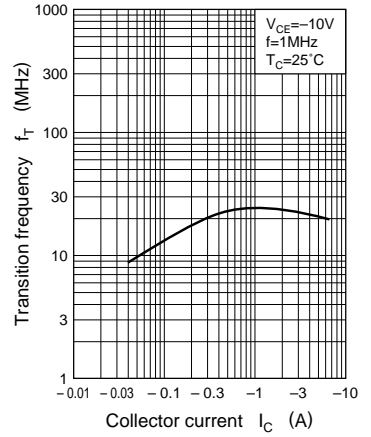
$V_{CE(sat)} - I_C$



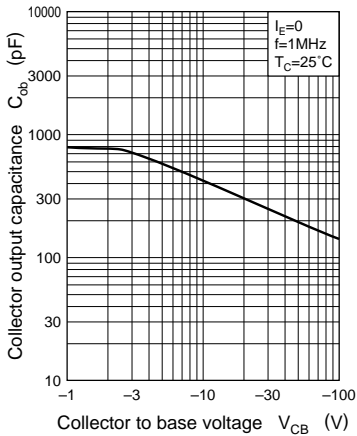
$h_{FE} - I_C$



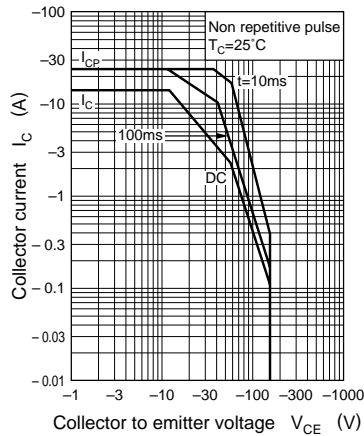
$f_T - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$$R_{th(t)} - t$$

