

# Low Frequency Transistor (−32V, −0.8A)

## 2SB1197K

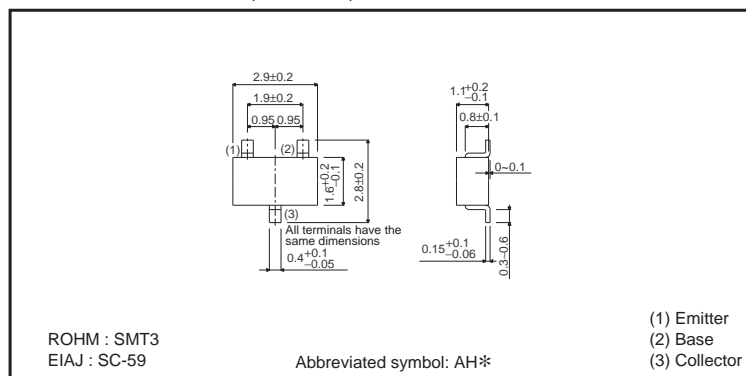
### ●Features

- 1) Low  $V_{CE(sat)}$ .  
 $V_{CE(sat)} \leq -0.5V$   
 $(I_c / I_B = -0.5A / -50mA)$
- 2)  $I_c = -0.8A$ .
- 3) Complements the 2SD1781K.

### ●Structure

Epitaxial planar type  
 PNP silicon transistor

### ●External dimensions (Unit : mm)



\* Denotes  $h_{FE}$

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	−40	V
Collector-emitter voltage	$V_{CEO}$	−32	V
Emitter-base voltage	$V_{EBO}$	−5	V
Collector current	$I_c$	−0.8	A
Collector power dissipation	$P_c$	0.2	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	−55 to 150	°C

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	−40	−	−	V	$I_c = -50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	−32	−	−	V	$I_c = -1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	−5	−	−	V	$I_E = -50\mu A$
Collector cutoff current	$I_{CBO}$	−	−	−0.5	$\mu A$	$V_{CB} = -20V$
Emitter cutoff current	$I_{EBO}$	−	−	−0.5	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	−	−	−0.5	V	$I_c/I_B = -0.5A / -50mA$
DC current transfer ratio	$h_{FE}$	120	−	390	−	$V_{CE} = -3V, I_c = -100mA$
Transition frequency	$f_T$	−	200	−	MHz	$V_{CE} = -5V, I_E = 50mA, f = 100MHz$
Output capacitance	$C_{ob}$	−	12	30	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

Transistors

●Packaging specifications and  $h_{FE}$

Type	$h_{FE}$	Package	Taping
		Code	T146
		Basic ordering unit (pieces)	3000
2SB1197K	QR		○

$h_{FE}$  values are classified as follows :

Item	Q	R
$h_{FE}$	120 to 270	180 to 390

●Electrical characteristic curves

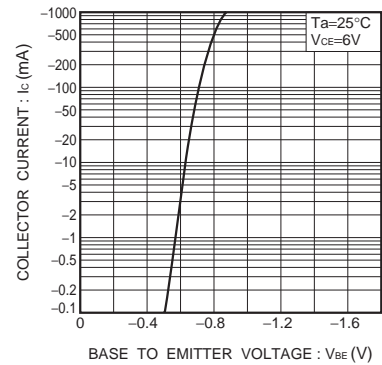


Fig.1 Grounded emitter propagation characteristics

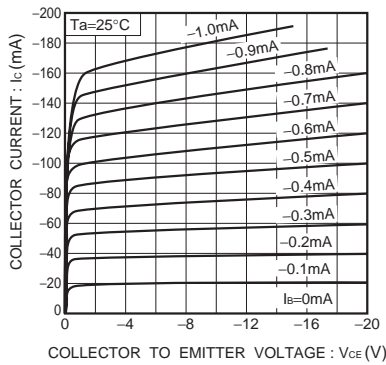


Fig.2 Grounded emitter output characteristics ( I )

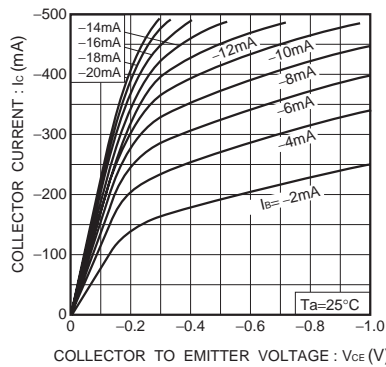


Fig.3 Grounded emitter output characteristics ( II )

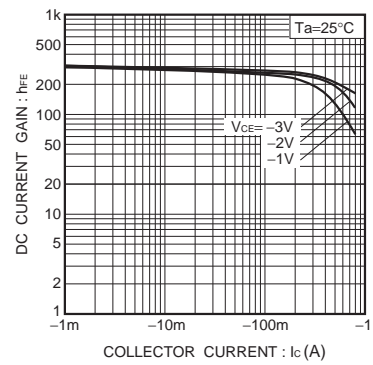


Fig.4 DC current gain vs. collector current

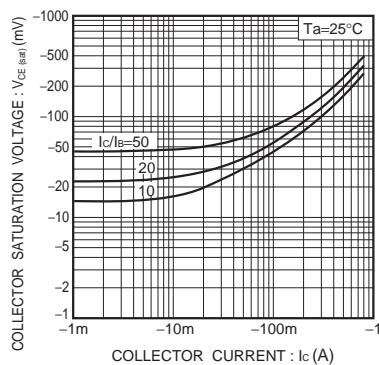


Fig.5 Collector-emitter saturation voltage vs. collector current

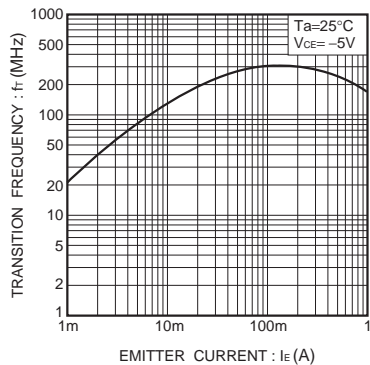


Fig.6 Gain bandwidth product vs. emitter current

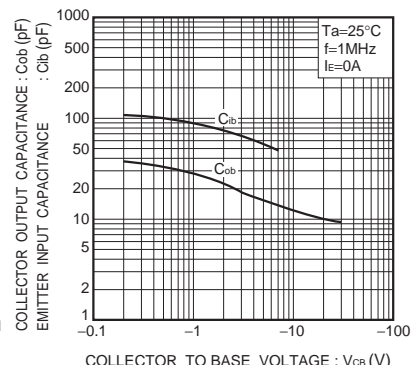


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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