

# Low Frequency Transistor

## ( $-32V$ , $-0.8A$ )

### 2SB1197K

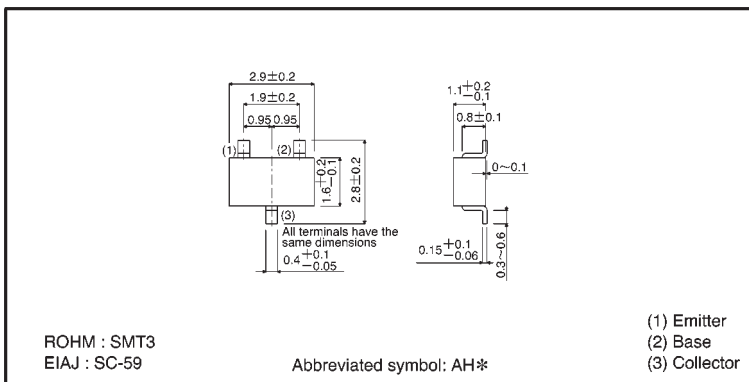
#### ●Features

- 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 (Units: mm)



#### ●Absolute maximum ratings ( $T_a = 25^\circ C$ ) \* Denotes $h_{FE}$

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	$^\circ C$
Storage temperature	$T_{stg}$	-55~+150	$^\circ C$

#### ●Electrical characteristics ( $T_a = 25^\circ C$ )

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	$f_T$	50	200	—	MHz	$V_{CE} = -5V$ , $I_E = 50mA$ , $f = 100MHz$
Output capacitance	$C_{ob}$	—	12	30	pF	$V_{CB} = -10V$ , $I_E = 0A$ , $f = 1MHz$

● 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
$h_{FE}$	120~270	180~390

● Electrical characteristic curves

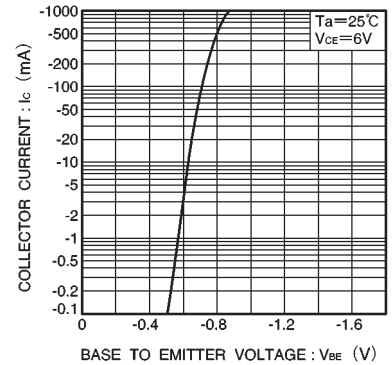


Fig.1 Grounded emitter propagation characteristics

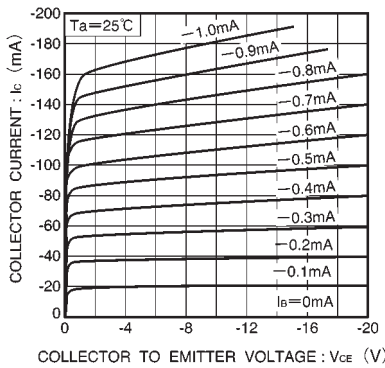


Fig.2 Grounded emitter output characteristics ( I )

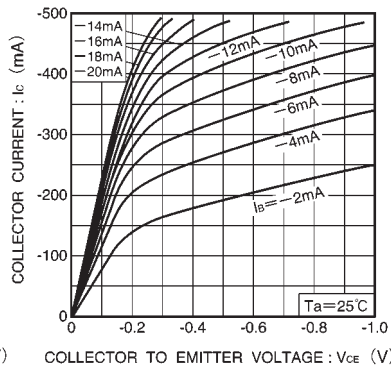


Fig.3 Grounded emitter output characteristics ( II )

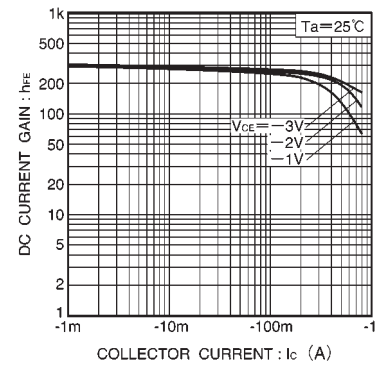


Fig.4 DC current gain vs. collector current

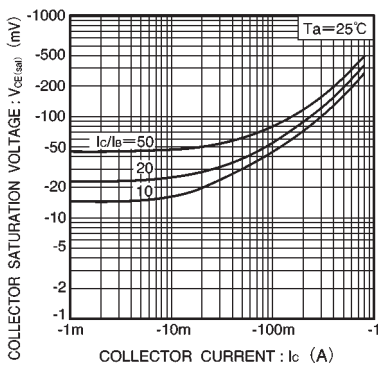


Fig.5 Collector-emitter saturation voltage vs. collector current

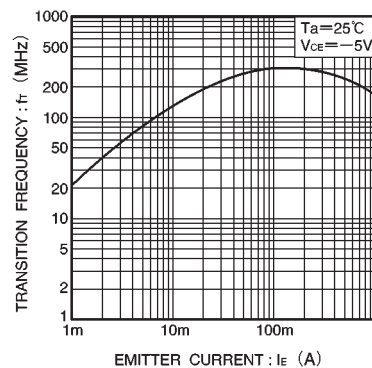


Fig.6 Gain bandwidth product vs. emitter current

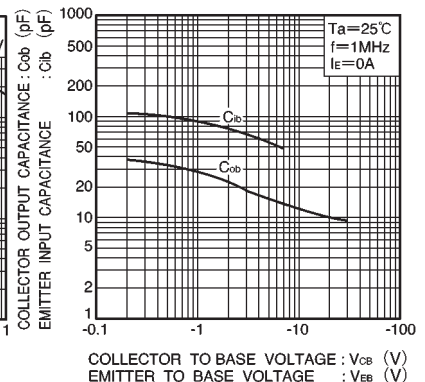


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage