

# Low-frequency Transistor

## (-80V, -0.5A)

### 2SB1198K

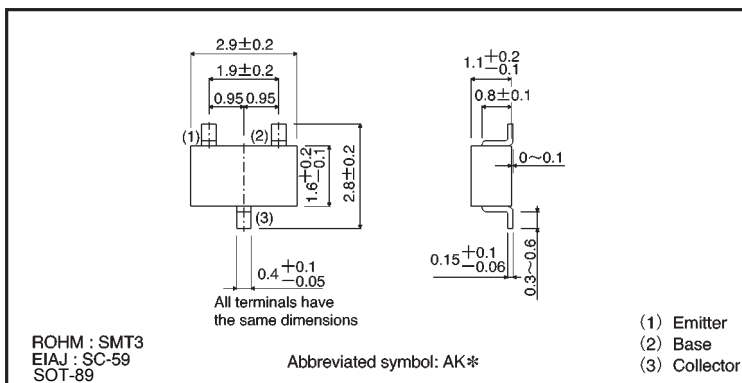
#### ●Features

- 1) Low  $V_{CE(sat)}$ .  
 $V_{CE(sat)} = -0.2V$  (Typ.)  
( $I_C / I_B = -0.5A / -50mA$ )
- 2) High breakdown voltage.  
 $BV_{CEO} = -80V$
- 3) Complements the 2SD1782K.

#### ●Structure

Epitaxial planar type  
PNP silicon transistor

#### ●External dimensions (Unit:s mm)



#### ●Absolute maximum ratings ( $T_a = 25^\circ C$ )

\* Denotes  $h_{FE}$

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	-80	V
Collector-emitter voltage	$V_{CEO}$	-80	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-0.5	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	$BV_{CBO}$	-80	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	-80	—	—	V	$I_C = -2mA$
Emitter-base breakdown voltage	$BV_{EBO}$	-5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	-0.5	$\mu A$	$V_{CB} = -50V$
Emitter cutoff current	$I_{EBO}$	—	—	-0.5	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	-0.2	-0.5	V	$I_C / I_B = -0.5A / -50mA$
DC current transfer ratio	$h_{FE}$	120	—	390	—	$V_{CE} = -3V, I_C = -0.1A$
Transition frequency	$f_T$	—	180	—	MHz	$V_{CE} = -10V, I_E = 50mA, f = 100MHz$
Output capacitance	$C_{ob}$	—	11	—	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
2SB1198K	QR		○

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

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

● Electrical characteristic curves

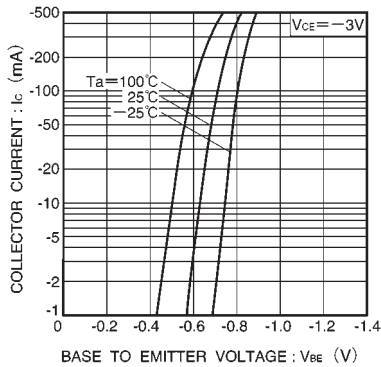


Fig.1 Grounded emitter propagation characteristics

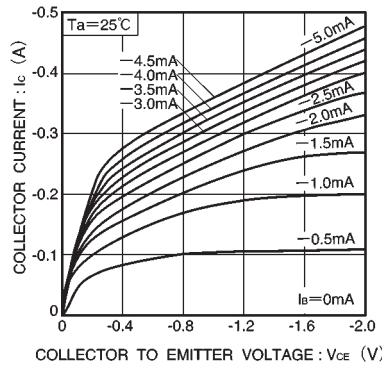


Fig.2 Grounded emitter output characteristics

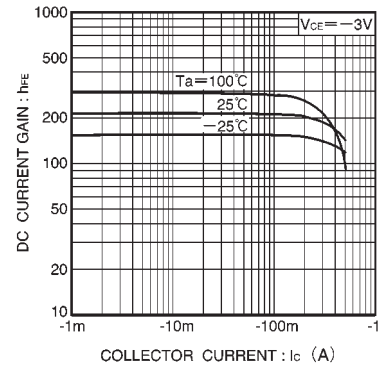


Fig.3 DC current gain vs. collector current

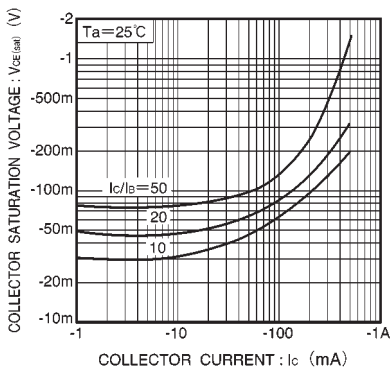


Fig.4 Collector-emitter saturation voltage vs. collector current ( I )

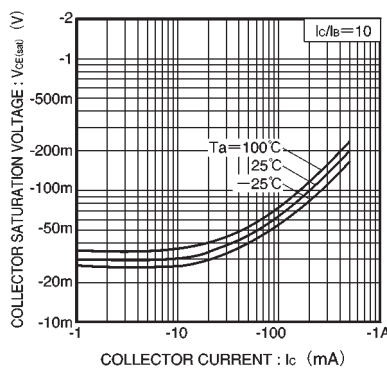


Fig.5 Collector-emitter saturation voltage vs. collector current ( II )

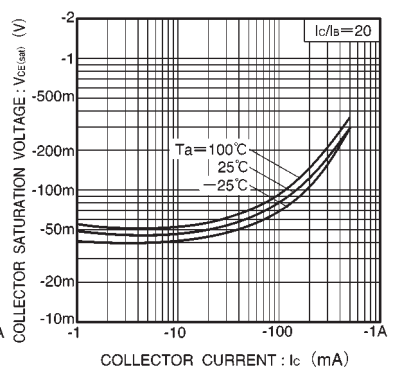


Fig.6 Collector-emitter saturation voltage vs. collector current ( III )

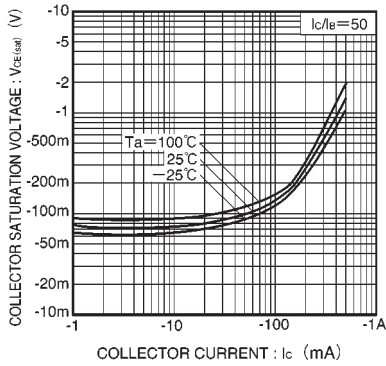


Fig.7 Collector-emitter saturation voltage vs. collector current (IV)

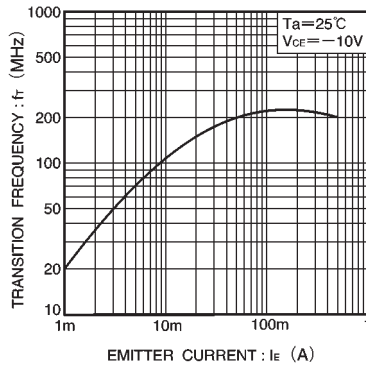


Fig.8 Gain bandwidth product vs. emitter current

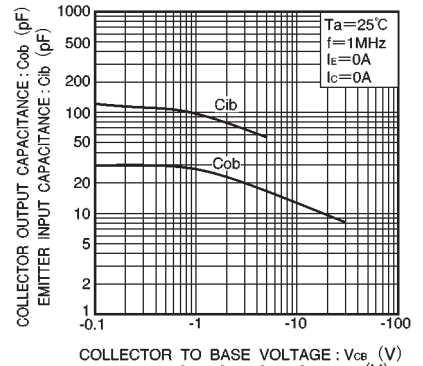


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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