Low-frequency Transistor (−80V, −0.5A)

2SB1198K

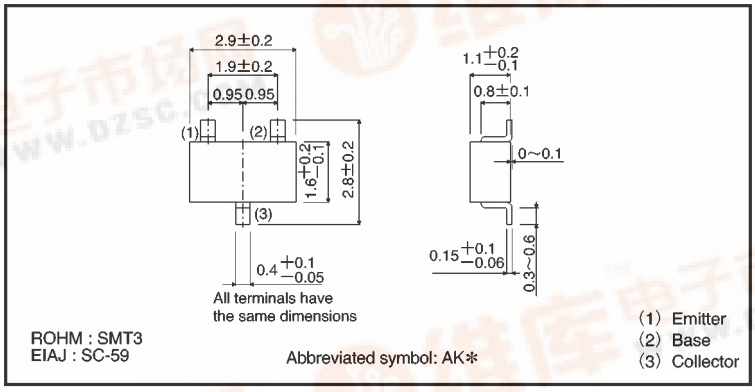
●Features

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)



∗ Denotes h_{FE}

●Absolute maximum ratings (Ta = 25°C)

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	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−80	—	—	V	I_C=−2mA
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E=−50 μA
Collector cutoff current	I_{CBO}	—	—	−0.5	μA	V_{CB}=−50V
Emitter cutoff current	I_{EBO}	—	—	−0.5	μA	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	Cob	—	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

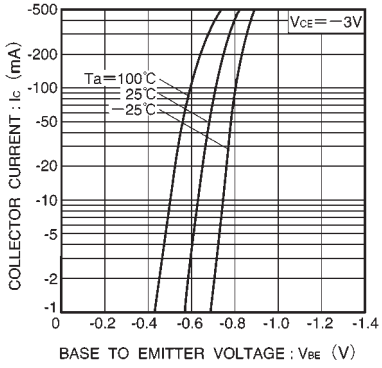


Fig.1 Grounded emitter propagation characteristics

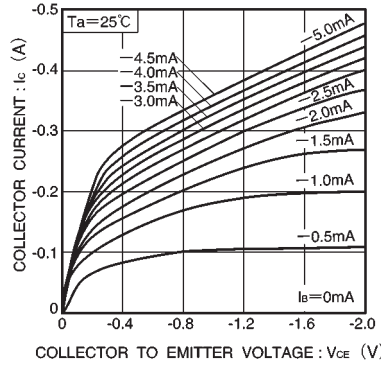


Fig.2 Grounded emitter output characteristics

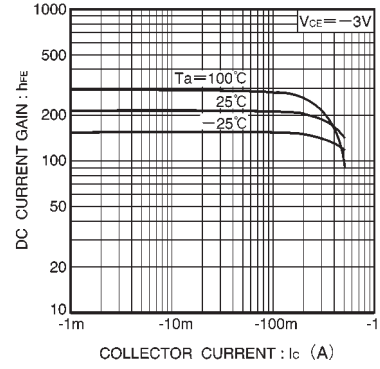


Fig.3 DC current gain vs. collector current

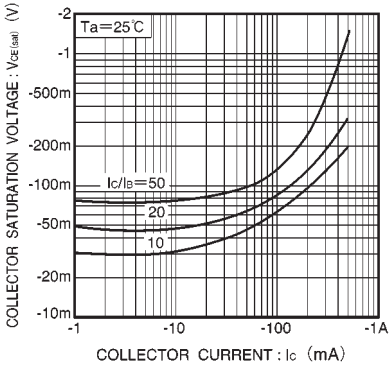


Fig.4 Collector-emitter saturation voltage vs. collector current (Ⅰ)

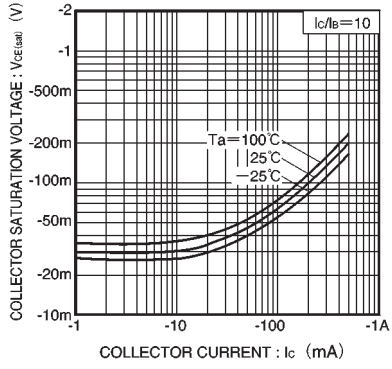


Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅱ)

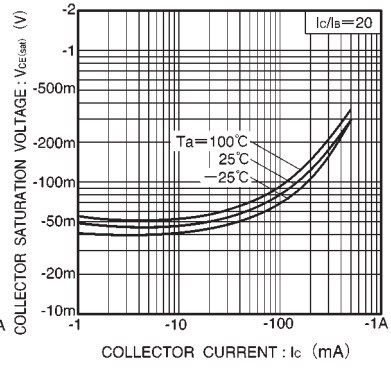


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅲ)

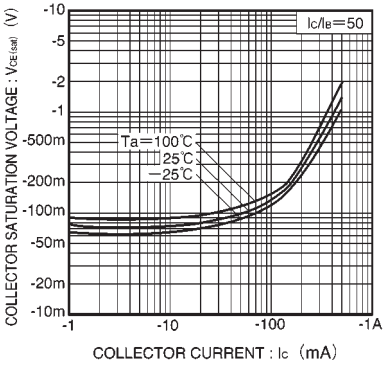


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅳ)

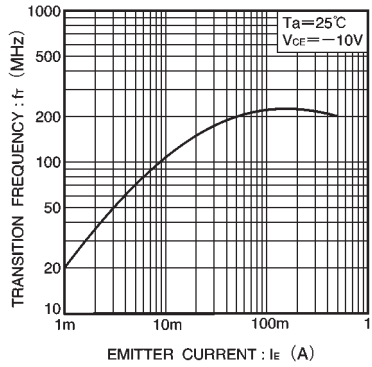


Fig.8 Gain bandwidth product vs. emitter current

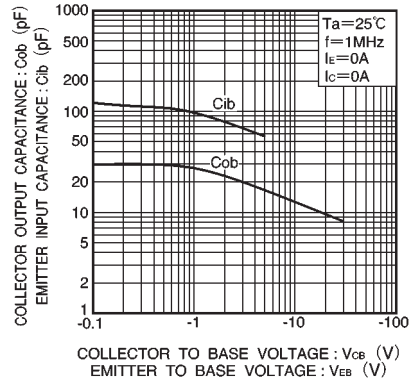


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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