

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

2SB1198K

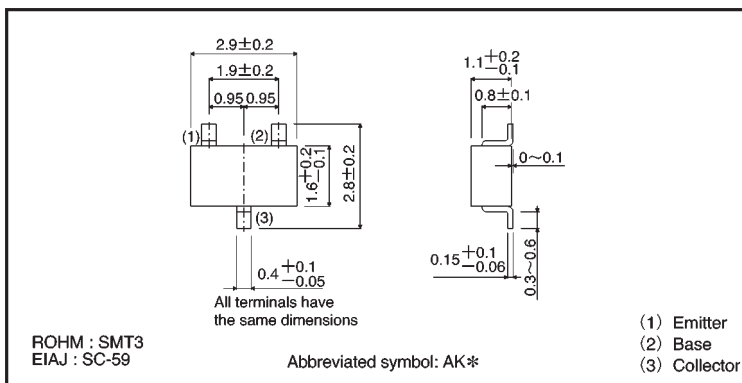
●Features

- 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 ($T_a = 25^\circ C$)

| 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 | 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 | 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

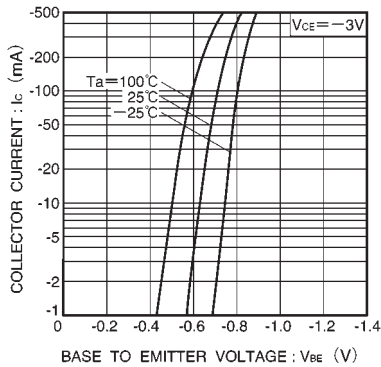


Fig.1 Grounded emitter propagation characteristics

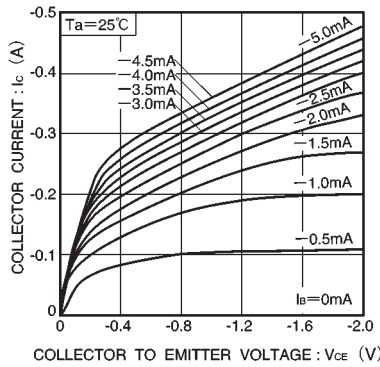


Fig.2 Grounded emitter output characteristics

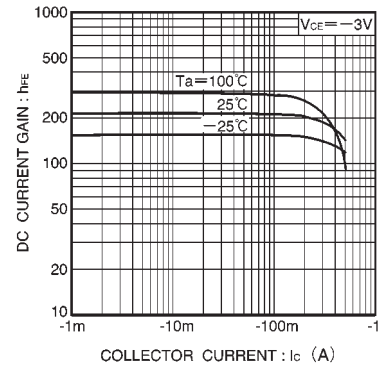


Fig.3 DC current gain vs. collector current

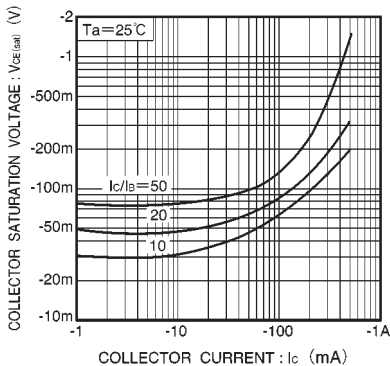


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

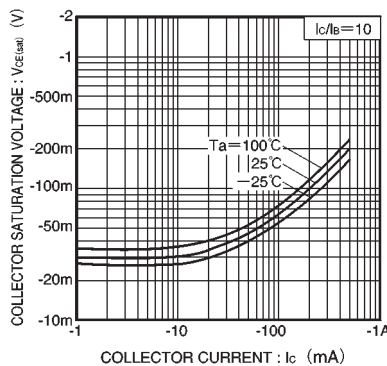


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

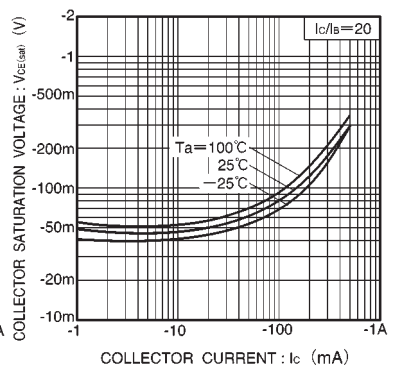


Fig.6 Collector-emitter saturation voltage vs. collector current (III)

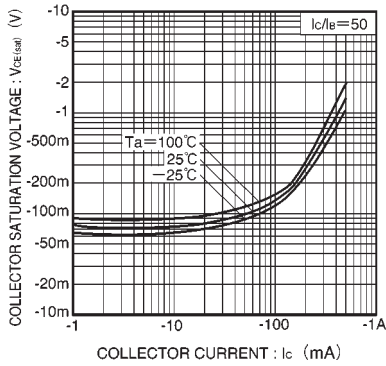


Fig.7 Collector-emitter saturation voltage vs. collector current (IV)

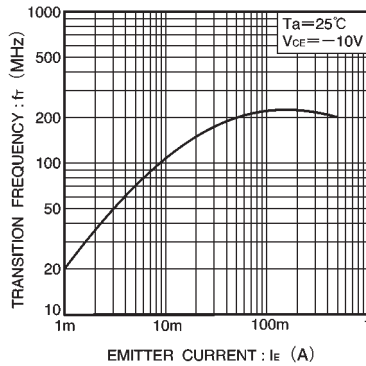


Fig.8 Gain bandwidth product vs. emitter current

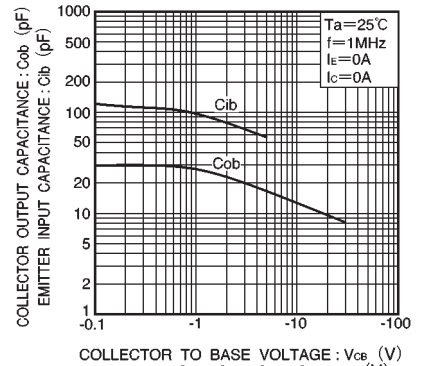


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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Промышленная ул, дом № 19, литера Н,
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