# Power Transistor (–80V, –1A)

## 2SB1260 / 2SB1181 / 2SB1241

### ●Features

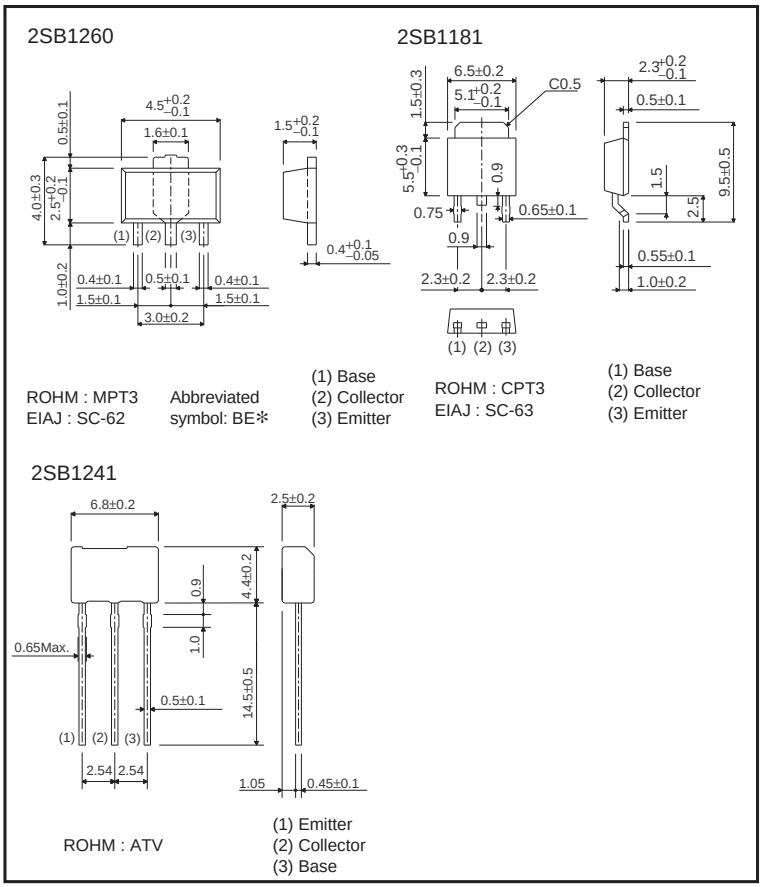
1) Hight breakdown voltage and high current.
   $BV_{CEO}$= –80V, $I_C$ = –1A
2) Good $h_{FE}$ linearty.
3) Low $V_{CE(sat)}$.

Complements the 2SD1898 / 2SD1863 / 2SD1733.

### ●Structure

Epitaxial planar type
PNP silicon transistor

### ●Dimensions (Unit : 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 | | $I_C$ | –1 | A (DC) |
| | | $I_{CP}$ | –2 *1 | A (Pulse) |
| Collector power dissipation | 2SB1260 | $P_C$ | 0.5 | W |
| | | | 2 *2 | |
| | 2SB1241, 2SB1181 | | 1 *3 | |
| | 2SB1181 | | 10 | W (Tc=25°C) |
| Junction temperature | | Tj | 150 | °C |
| Storage temperature | | Tstg | –55 to 150 | °C |

*1 2SB1260 : Pw=20ms duty=1/2
   2SB1241 : Single pulse, Pw=100ms
*2 2SB1260 : When mounted on a 40×40×0.7 mm ceramic board.
*3 2SB1241 : Printed circuit board, 1.7mm thick, collector copper plating 100mm² or larger.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## ●Electrical characteristics (Ta=25°C)

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | | $BV_{CBO}$ | –80 | – | – | V | $I_C$= –50μA |
| Collector-emitter breakdown voltage | | $BV_{CEO}$ | –80 | – | – | V | $I_C$= –1mA |
| Emitter-base breakdown voltage | | $BV_{EBO}$ | –5 | – | – | V | $I_E$= –50μA |
| Collector cutoff current | | $I_{CBO}$ | – | – | –1 | μA | $V_{CB}$= –60V |
| Emitter cutoff current | | $I_{EBO}$ | – | – | –1 | μA | $V_{EB}$= –4V |
| Collector-emitter saturation voltage | | $V_{CE(sat)}$ | – | – | –0.4 | V | $I_C/I_B$= –500mA/ –50mA |
| DC current transfer ratio | 2SB1260, 2SB1181 | $h_{FE}$ | 120 | – | 390 | – | $V_{CE}$= –3V, $I_C$= –0.1A |
| | 2SB1241 | | 120 | – | 390 | – | |
| Transition frequency | 2SB1181 | $f_T$ | – | 100 | – | MHz | $V_{CE}$= –10V, $I_E$=50mA, f=100MHz |
| Output capacitance | 2SB1260 | Cob | – | 20 | – | pF | $V_{CB}$= –10V<br>$I_E$=0A<br>f=1MHz |
| | 2SB1181, 2SB1241 | | – | 25 | – | pF | |

## ●Packaging specifications and $h_{FE}$

| Type | $h_{FE}$ | Package | Taping | | |
|---|---|---|---|---|---|
| | | Code | TL | TV2 | T100 |
| | | Basic ordering unit (pieces) | 2500 | 2500 | 1000 |
| 2SB1260 | QR | | – | – | ○ |
| 2SB1241 | QR | | – | ○ | – |
| 2SB1181 | QR | | ○ | – | – |

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

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

## ●Electrical characteristic curves

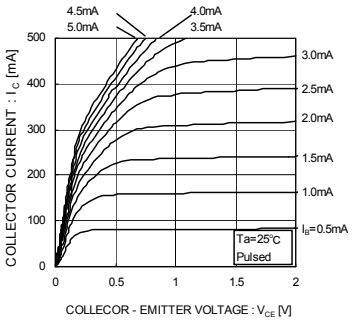


Fig.1 Ground Emitter Output Characteristics

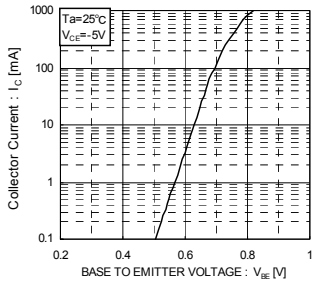


Fig.2 Grounded Emitter Propagation Characteristics

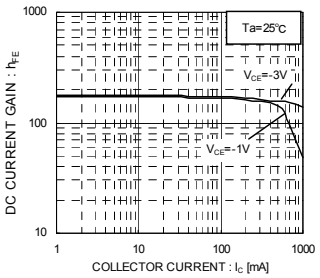


Fig.3 DC Current Gain vs Collector Current

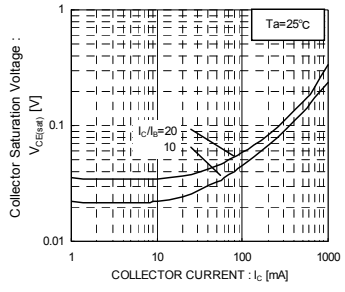


Fig.4 Collector-Emitter Saturation Voltage vs Collector Current

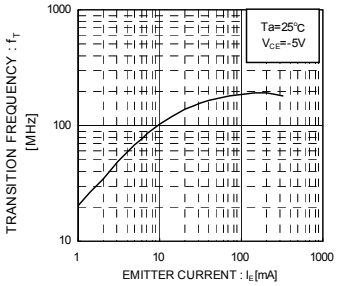


Fig.5 Transition Frewuency vs Emitter Current

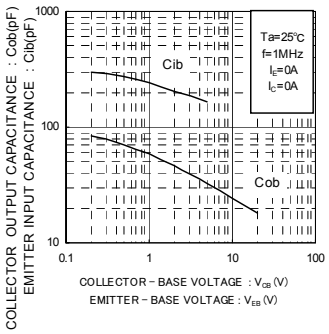


Fig.6 Emitter Input Capacitance vs. Emitter-Base Voltage
Collector Output Capacitance vs. Collector-Base


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