

# 2SB1220G

## Silicon PNP epitaxial planar type

For high breakdown voltage low-noise amplification

Complementary to 2SD1821G

### ■ Features

- High collector-emitter voltage (Base open)  $V_{CEO}$
- Low noise voltage NV
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

### ■ Package

- Code  
SMini3-F2
- Marking Symbol: I
- Pin Name
  1. Base
  2. Emitter
  3. Collector

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | -150        | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | -150        | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | -5          | V                |
| Collector current                     | $I_C$     | -50         | mA               |
| Peak collector current                | $I_{CP}$  | -100        | mA               |
| Collector power dissipation           | $P_C$     | 150         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

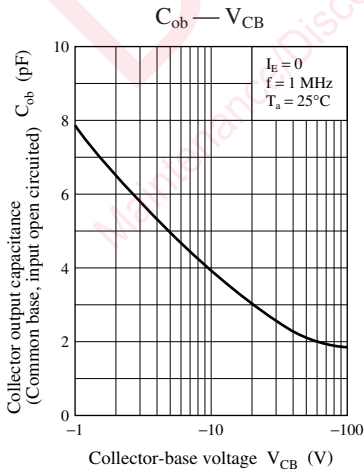
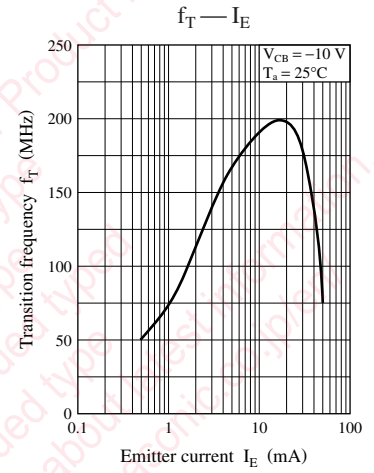
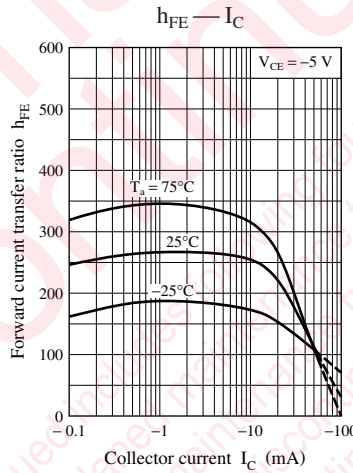
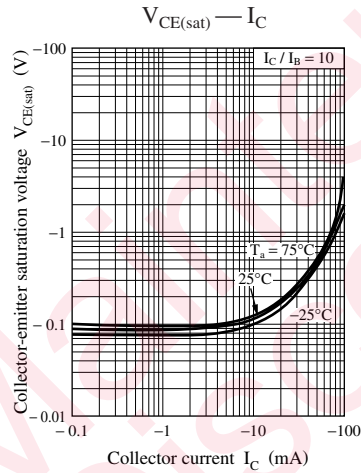
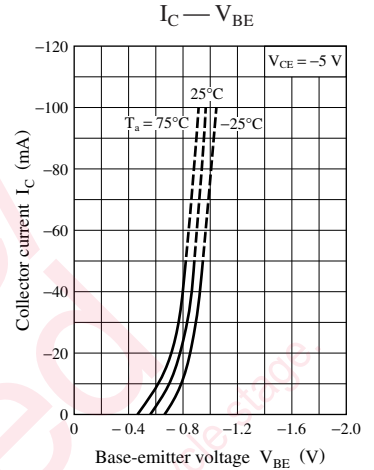
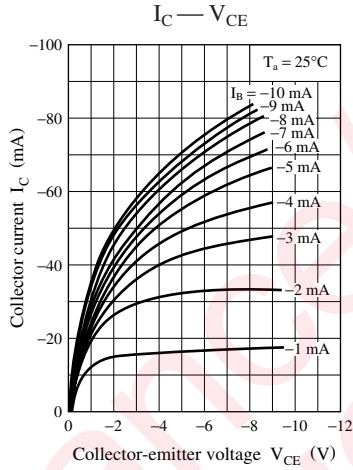
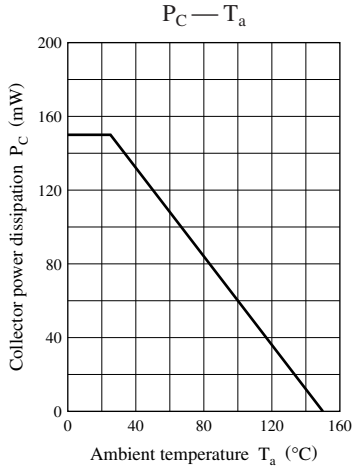
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter   | Symbol        | Conditions   | Min  | Typ | Max | Unit          |
|---|---------------|--|------|-----|-----|---------------|
| Collector-emitter voltage (Base open)                               | $V_{CEO}$     | $I_C = -100 \mu\text{A}, I_B = 0$  | -150 |     |     | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$     | $I_E = -10 \mu\text{A}, I_C = 0$   | -5   |     |     | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$     | $V_{CB} = -100 \text{V}, I_E = 0$  |      |     | -1  | $\mu\text{A}$ |
| Forward current transfer ratio *                                    | $h_{FE}$      | $V_{CE} = -5 \text{V}, I_C = -10 \text{mA}$  | 130  |     | 450 | —             |
| Collector-emitter saturation voltage                                | $V_{CE(sat)}$ | $I_C = -30 \text{mA}, I_B = -3 \text{mA}$  |      |     | -1  | V             |
| Transition frequency  | $f_T$         | $V_{CB} = -10 \text{V}, I_E = 10 \text{mA}, f = 200 \text{MHz}$  |      | 200 |     | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = -10 \text{V}, I_E = 0, f = 1 \text{MHz}$   |      | 4   |     | pF            |
| Noise voltage   | NV            | $V_{CE} = -10 \text{V}, I_C = -1 \text{mA}, G_V = 80 \text{dB}$<br>$R_g = 100 \text{k}\Omega, \text{Function} = \text{FLAT}$ |      | 150 |     | mV            |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

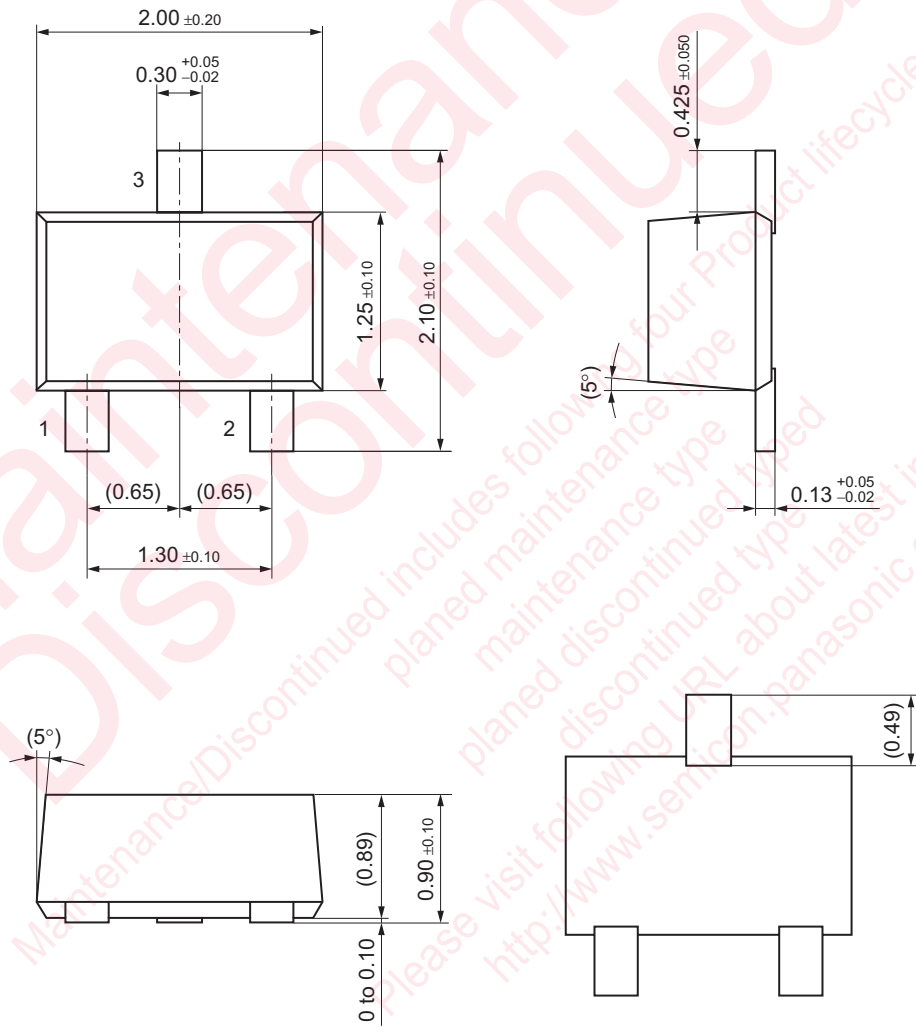
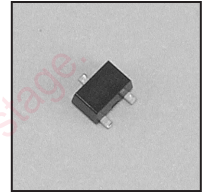
2. \*: Rank classification

| Rank     | R          | S          | T          |
|----------|------------|------------|------------|
| $h_{FE}$ | 130 to 220 | 185 to 330 | 260 to 450 |



SMini3-F2

Unit: mm



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