

2SD1821

Silicon NPN epitaxial planar type

For high breakdown voltage low-frequency and low-noise amplification

■ 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.

■ 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 | $^\circ\text{C}$ |

■ Package

- Code
SMini3-G1
- Pin Name
 1. Base
 2. Emitter
 3. Collector

■ Marking Symbol: P

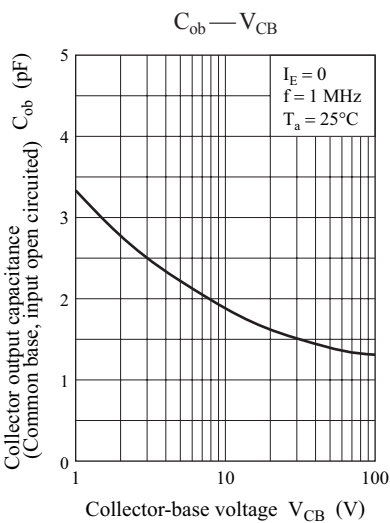
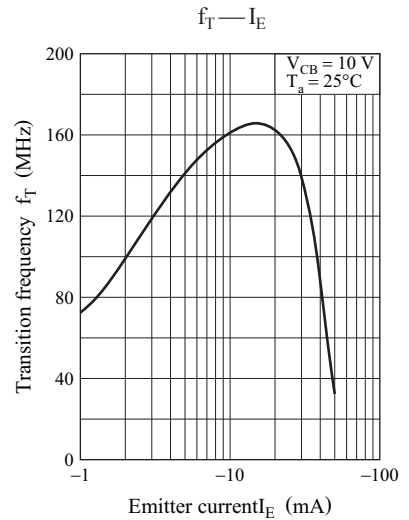
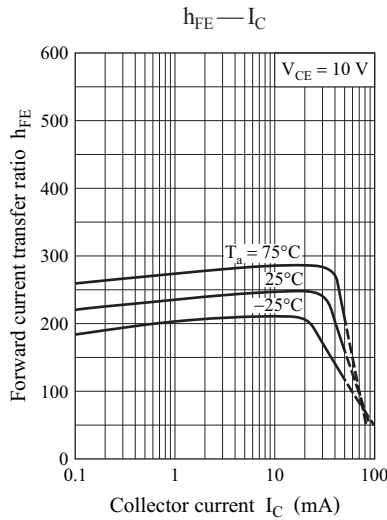
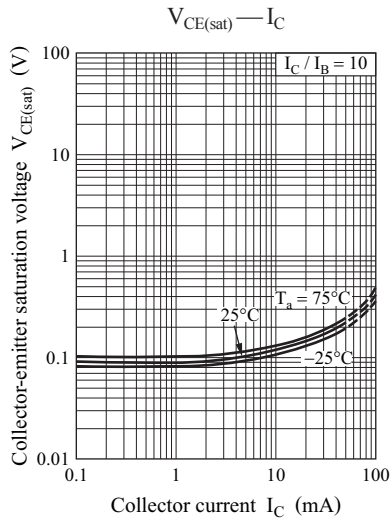
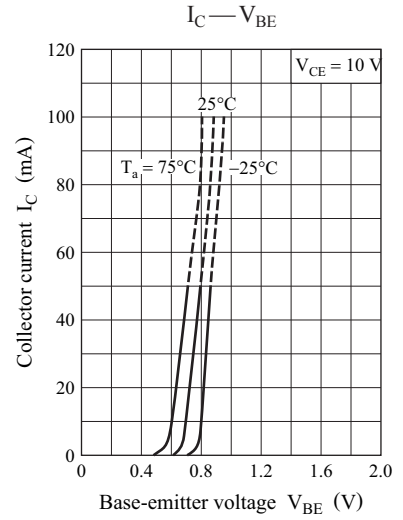
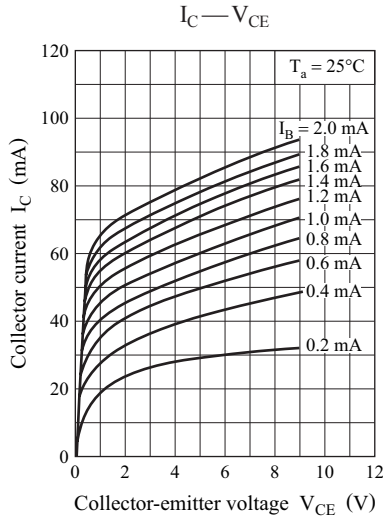
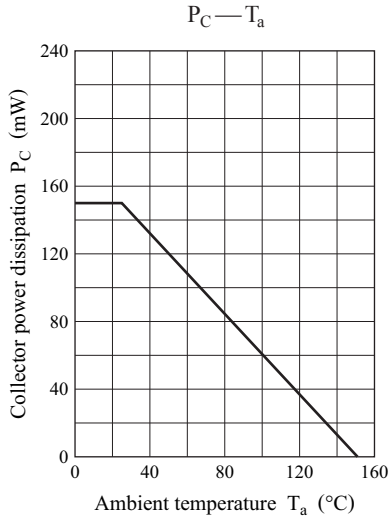
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| 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 | μA |
| Forward current transfer ratio * | h_{FE} | $V_{CE} = 5 \text{V}, I_C = 10 \text{mA}$ | 130 | | 330 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 30 \text{mA}, I_B = 3 \text{mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{V}, I_E = -10 \text{mA}, f = 200 \text{MHz}$ | | 150 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{V}, I_E = 0, f = 1 \text{MHz}$ | | 2.3 | | pF |
| Noise voltage | NV | $V_{CB} = 10 \text{V}, I_C = 1 \text{mA}, G_V = 80 \text{dB}, R_g = 100 \text{k}\Omega, \text{Function} = \text{FLAT}$ | | 150 | | mV |

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

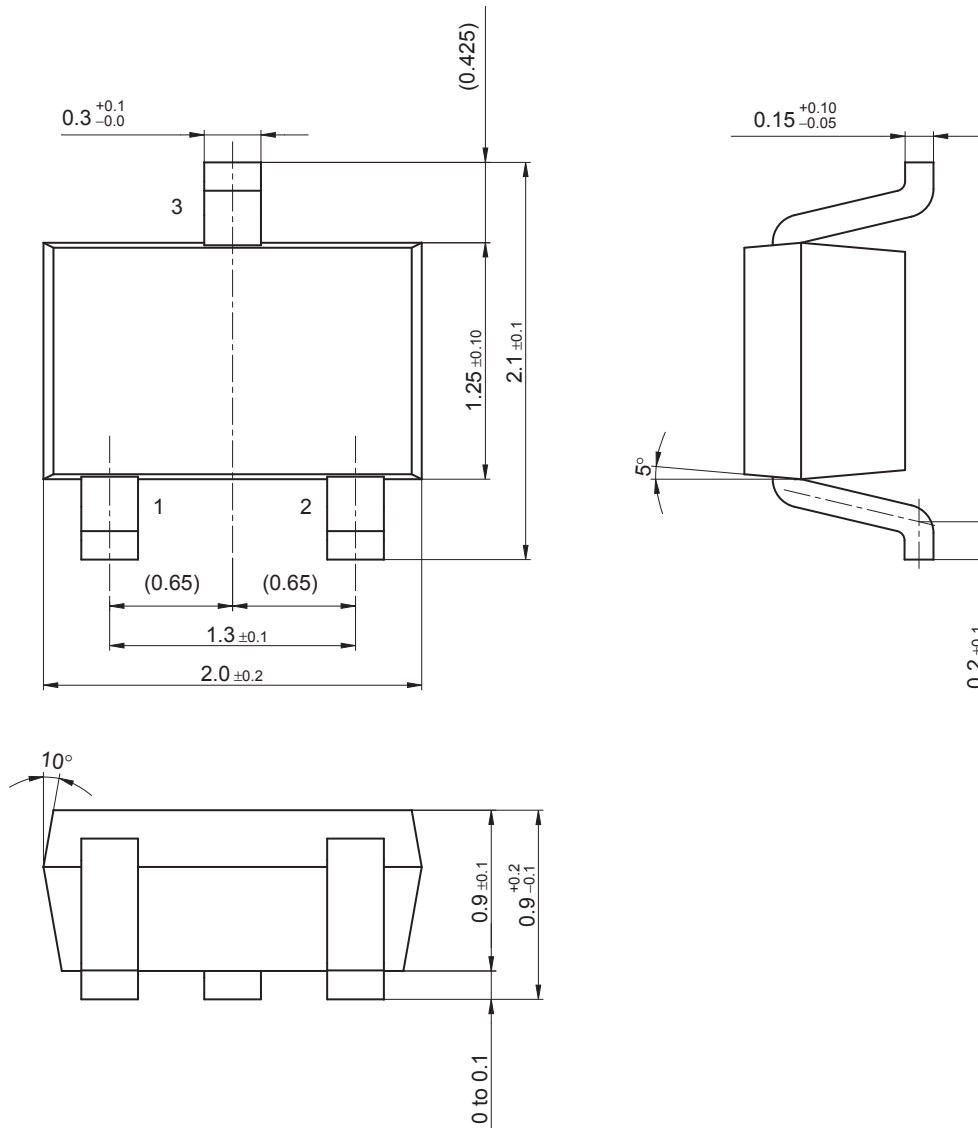
2. *: Rank classification

| Rank | R | S |
|----------|------------|------------|
| h_{FE} | 130 to 220 | 185 to 330 |



SMini3-G1

Unit: mm



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