

# 2SD0601A (2SD601A)

## Silicon NPN epitaxial planar type

For general amplification

Complementary to 2SB0709A (2SB709A)

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

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

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 60          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 50          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 7           | V                |
| Collector current                     | $I_C$     | 100         | mA               |
| Peak collector current                | $I_{CP}$  | 200         | mA               |
| Collector power dissipation           | $P_C$     | 200         | 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-base voltage (Emitter open)                               | $V_{CBO}$     | $I_C = 10 \mu\text{A}, I_E = 0$  | 60  |     |     | V             |
| Collector-emitter voltage (Base open)                               | $V_{CEO}$     | $I_C = 2 \text{ mA}, I_B = 0$  | 50  |     |     | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$     | $I_E = 10 \mu\text{A}, I_C = 0$  | 7   |     |     | V             |
| Collector-base cut-off current (Emitter open)                       | $I_{CBO}$     | $V_{CB} = 20 \text{ V}, I_E = 0$   |     |     | 0.1 | $\mu\text{A}$ |
|   | $I_{CEO}$     | $V_{CE} = 10 \text{ V}, I_B = 0$   |     |     | 100 | $\mu\text{A}$ |
| Forward current transfer ratio                                      | $h_{FE1}^*$   | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$  | 160 |     | 460 | —             |
|   | $h_{FE2}$     | $V_{CE} = 2 \text{ V}, I_C = 100 \text{ mA}$   | 90  |     |     |               |
| Collector-emitter saturation voltage                                | $V_{CE(sat)}$ | $I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$  |     | 0.1 | 0.3 | V             |
| Transition frequency  | $f_T$         | $V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$  |     | 150 |     | MHz           |
| Noise voltage   | NV            | $V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}, G_V = 80 \text{ dB}$<br>$R_g = 100 \text{ k}\Omega, \text{Function} = \text{FLAT}$ |     | 110 |     | mV            |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$  |     |     | 3.5 | pF            |

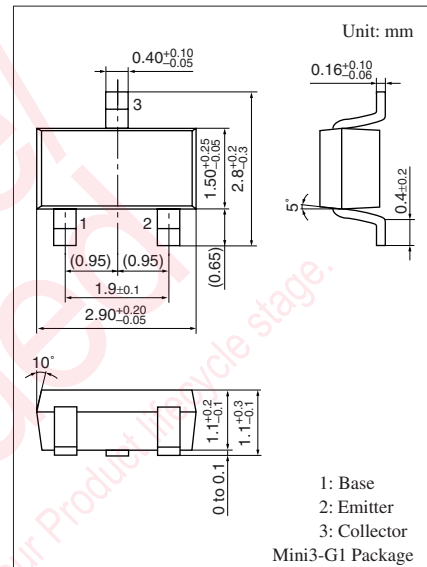
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

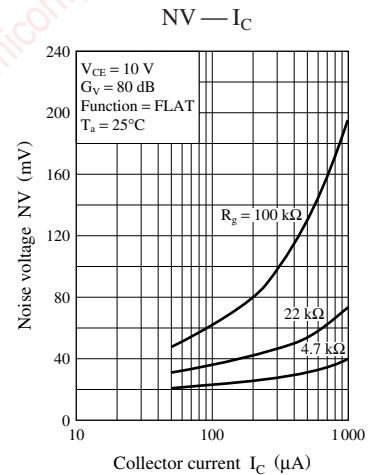
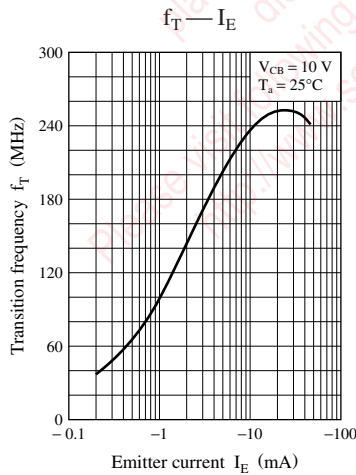
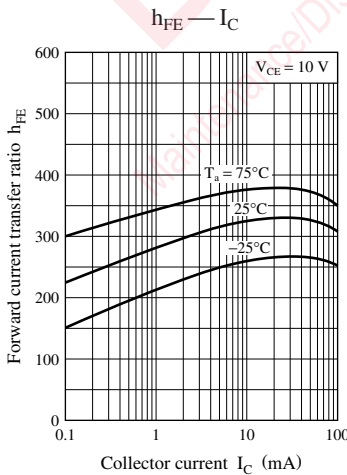
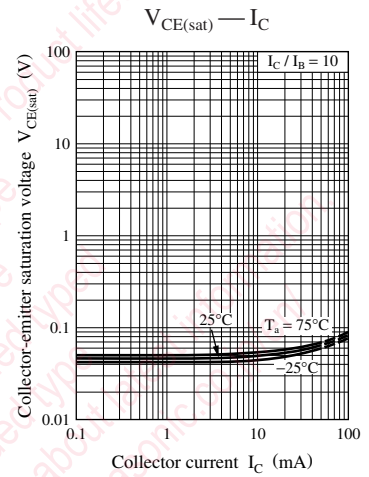
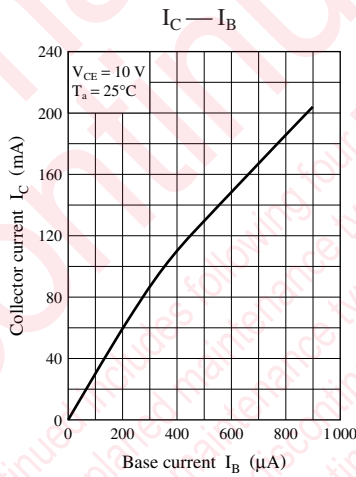
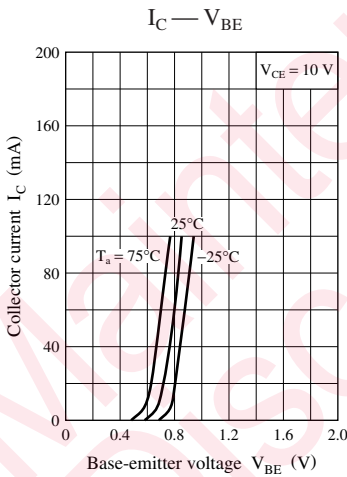
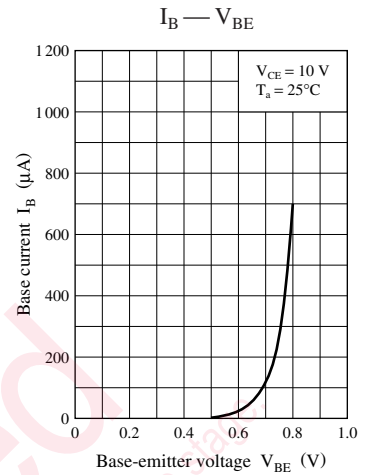
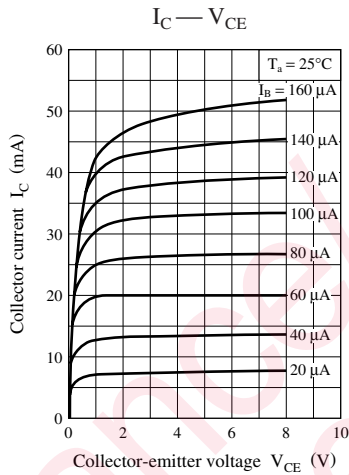
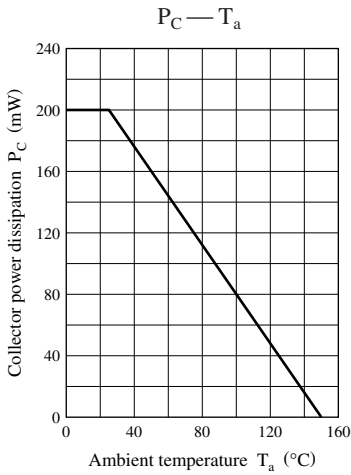
| Rank           | Q          | R          | S          | No-rank    |
|----------------|------------|------------|------------|------------|
| $h_{FE1}$      | 160 to 260 | 210 to 340 | 290 to 460 | 160 to 460 |
| Marking symbol | ZQ         | ZR         | ZS         | Z          |

Product of no-rank is not classified and have no marking symbol for rank.

Note) The part number in the parenthesis shows conventional part number.



Marking Symbol: Z



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