

# 2SD2345

## Silicon NPN epitaxial planar type

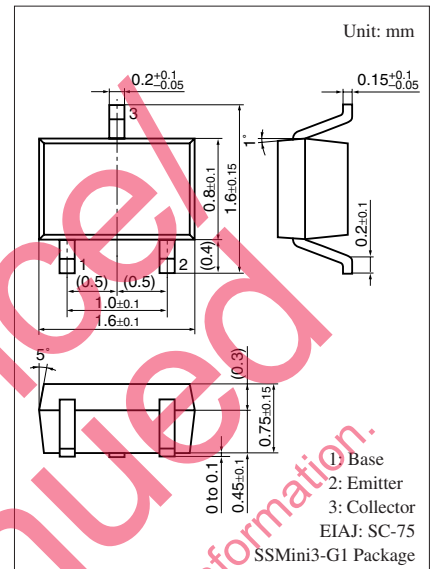
For low-frequency amplification

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- High emitter-base voltage (Collector open)  $V_{EBO}$
- Low noise voltage  $NV$

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

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 50          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 40          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 15          | V                |
| Collector current                     | $I_C$     | 50          | mA               |
| Peak collector current                | $I_{CP}$  | 100         | mA               |
| Collector power dissipation           | $P_C$     | 125         | mW               |
| Junction temperature                  | $T_j$     | 125         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |



Marking symbol: 1Z

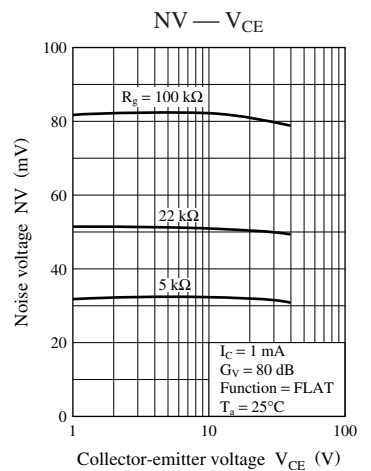
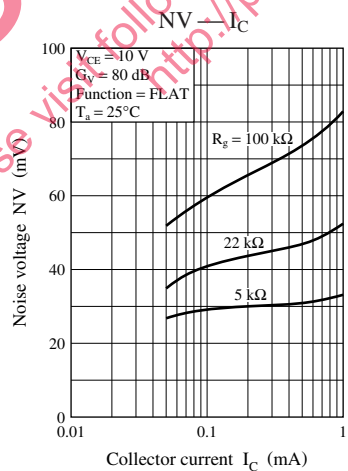
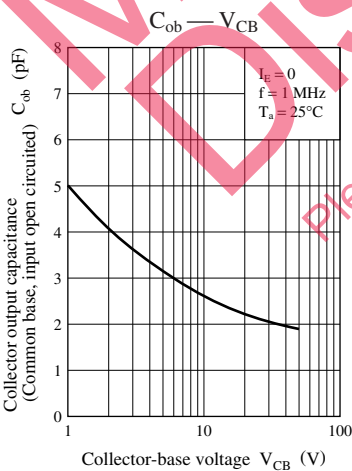
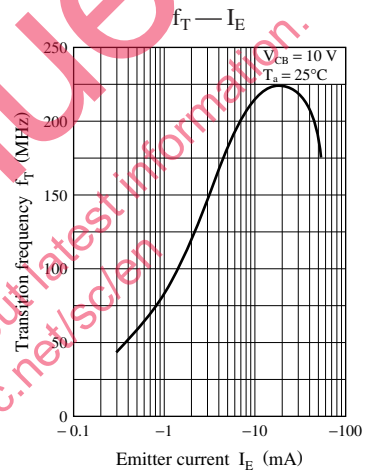
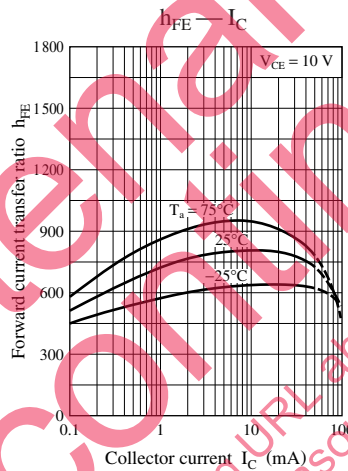
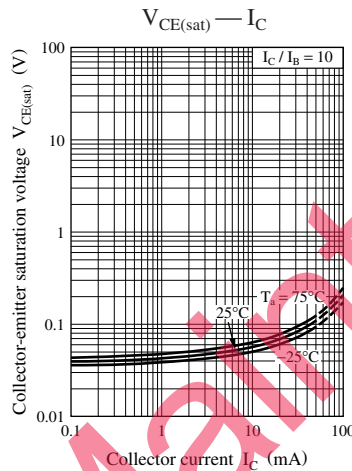
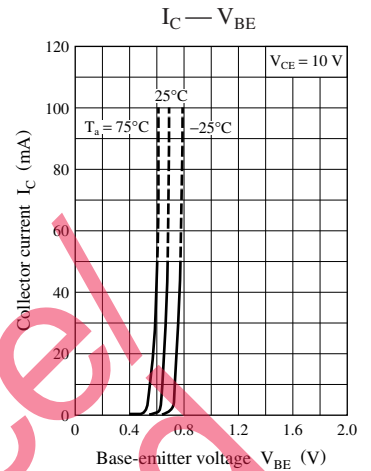
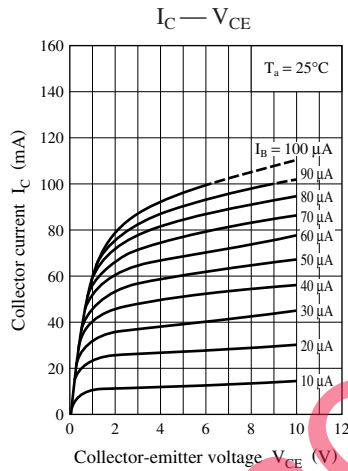
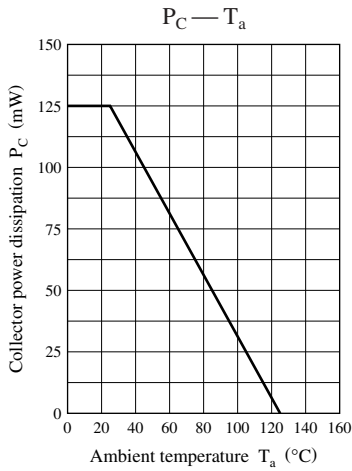
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                                    | Symbol        | Conditions  | Min | Typ  | Max  | Unit          |
|--|---------------|---|-----|------|------|---------------|
| Collector-base voltage (Emitter open)        | $V_{CBO}$     | $I_C = 10 \mu\text{A}, I_E = 0$                                   | 50  |      |      | V             |
| Collector-emitter voltage (Base open)        | $V_{CEO}$     | $I_C = 1 \text{ mA}, I_B = 0$                                     | 40  |      |      | V             |
| Emitter-base voltage (Collector open)        | $V_{EBO}$     | $I_E = 10 \mu\text{A}, I_C = 0$                                   | 15  |      |      | V             |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$     | $V_{CB} = 20 \text{ V}, I_E = 0$                                  |     |      | 100  | nA            |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = 20 \text{ V}, I_B = 0$                                  |     |      | 1    | $\mu\text{A}$ |
| Forward current transfer ratio *             | $h_{FE}$      | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$                       | 400 |      | 2000 | —             |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$                         |     | 0.05 | 0.20 | V             |
| Transition frequency                         | $f_T$         | $V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$ |     | 120  |      | MHz           |

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

2. \*: Rank classification

| Rank     | R          | S           | T            |
|----------|------------|-------------|--------------|
| $h_{FE}$ | 400 to 800 | 600 to 1200 | 1000 to 2000 |



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