

# 2SD1423, 2SD1423A

## Silicon NPN epitaxial planar type

For low-frequency amplification

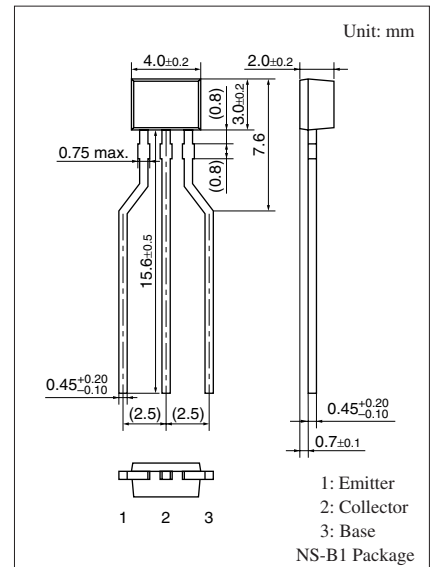
Complementary to 2SB1030 and 2SB1030A

### ■ Features

- Optimum for high-density mounting
- Allowing supply with the radial tapping

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

| Parameter                                | Symbol    | Rating      | Unit             |
|--|-----------|-------------|------------------|
| Collector-base voltage<br>(Emitter open) | 2SD1423   | 30          | V                |
|  | 2SD1423A  | 60          | V                |
| Collector-emitter voltage<br>(Base open) | 2SD1423   | 25          | V                |
|  | 2SD1423A  | 50          | V                |
| Emitter-base voltage (Collector open)    | $V_{EBO}$ | 7           | V                |
| Collector current                        | $I_C$     | 0.5         | A                |
| Peak collector current                   | $I_{CP}$  | 1           | A                |
| Collector power dissipation *            | $P_C$     | 300         | mW               |
| Junction temperature                     | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                      | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |



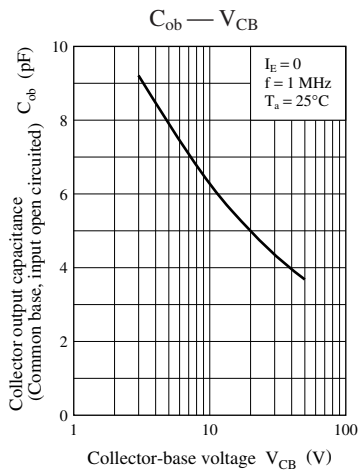
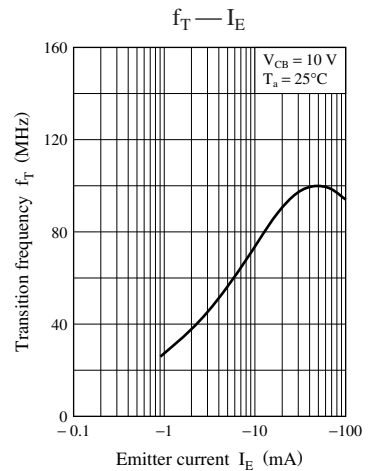
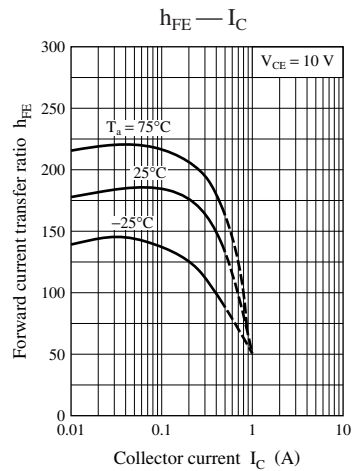
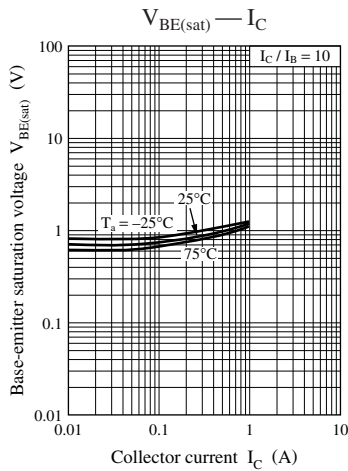
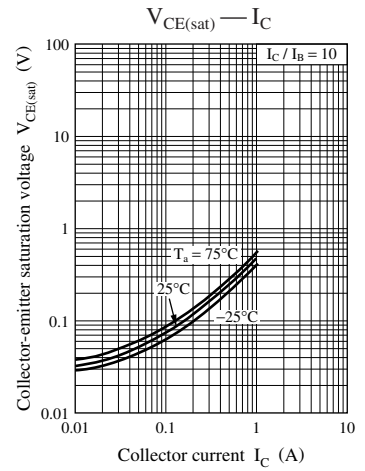
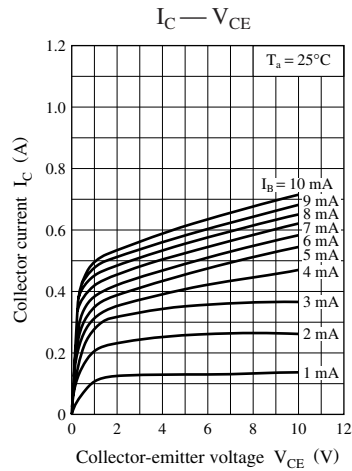
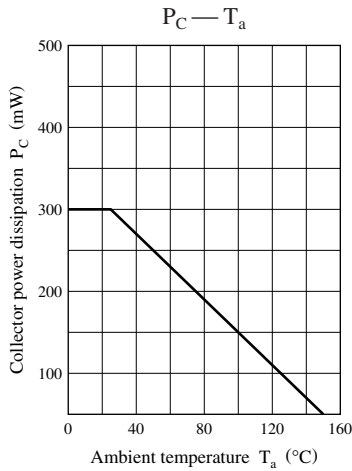
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter   | Symbol        | Conditions   | Min | Typ | Max | Unit          |
|---|---------------|--|-----|-----|-----|---------------|
| Collector-base voltage<br>(Emitter open)                            | 2SD1423       | $I_C = 10 \mu\text{A}, I_E = 0$                                    | 30  |     |     | V             |
|   | 2SD1423A      |  | 60  |     |     | V             |
| Collector-emitter voltage<br>(Base open)                            | 2SD1423       | $I_C = 2 \text{ mA}, I_B = 0$                                      | 25  |     |     | V             |
|   | 2SD1423A      |  | 50  |     |     | V             |
| Emitter-base voltage (Collector open)                               | $V_{EBO}$     | $I_E = 10 \mu\text{A}, I_C = 0$                                    | 7   |     |     | V             |
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$     | $V_{CB} = 20 \text{ V}, I_E = 0$                                   |     |     | 0.1 | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open)                        | $I_{CEO}$     | $V_{CE} = 20 \text{ V}, I_B = 0$                                   |     |     | 1   | $\mu\text{A}$ |
| Forward current transfer ratio                                      | $h_{FE1}^*$   | $V_{CE} = 10 \text{ V}, I_C = 150 \text{ mA}$                      | 85  |     | 340 | —             |
|   | $h_{FE2}$     | $V_{CE} = 10 \text{ V}, I_C = 500 \text{ mA}$                      | 40  |     |     | —             |
| Collector-emitter saturation voltage                                | $V_{CE(sat)}$ | $I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$                        |     |     | 0.6 | V             |
| Transition frequency  | $f_T$         | $V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$ |     | 200 |     | MHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$                |     | 6   | 15  | 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          |
|-----------|-----------|------------|------------|
| $h_{FE1}$ | 85 to 170 | 120 to 240 | 170 to 340 |



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