

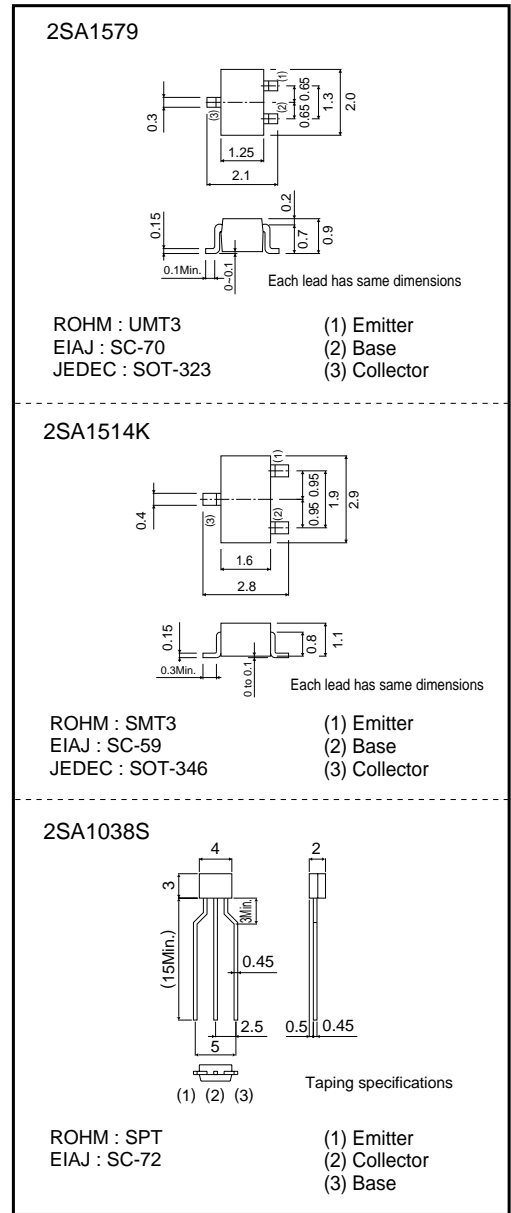
# High-voltage Amplifier Transistor (-120V, -50mA)

## 2SA1579 / 2SA1514K / 2SA1038S

●Features

- 1) High breakdown voltage. ( $BV_{CEO} = -120V$ )
- 2) Complements the 2SC4102 / 2SC3906K / 2SC2389S.

●External dimensions (Unit : mm)



# 2SA1579 / 2SA1514K / 2SA1038S

## Transistors

### ●Absolute maximum ratings (Ta=25°C)

| Parameter                   | Symbol           | Limits      | Unit |
|-----------------------------|------------------|-------------|------|
| Collector-base voltage      | V <sub>CB0</sub> | -120        | V    |
| Collector-emitter voltage   | V <sub>CE0</sub> | -120        | V    |
| Emitter-base voltage        | V <sub>EB0</sub> | -5          | V    |
| Collector current           | I <sub>c</sub>   | -50         | mA   |
| Collector power dissipation | P <sub>c</sub>   | 0.2         | W    |
|                             |                  | 0.3         |      |
| Junction temperature        | T <sub>j</sub>   | 150         | °C   |
| Storage temperature         | T <sub>stg</sub> | -55 to +150 | °C   |

### ●Packaging specifications and h<sub>FE</sub>

| Type                         | 2SA1579 | 2SA1514K | 2SA1038S |
|------------------------------|---------|----------|----------|
| Package                      | UMT3    | SMT3     | SPT      |
| h <sub>FE</sub>              | RS      | RS       | RS       |
| Marking                      | R*      | R*       | -        |
| Code                         | T106    | T146     | TP       |
| Basic ordering unit (pieces) | 3000    | 3000     | 5000     |

\*Denotes h<sub>FE</sub>

### ●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol               | Min. | Typ. | Max. | Unit | Conditions  |
|--------------------------------------|----------------------|------|------|------|------|---|
| Collector-base breakdown voltage     | BV <sub>CB0</sub>    | -120 | -    | -    | V    | I <sub>c</sub> = -50μA                                |
| Collector-emitter breakdown voltage  | BV <sub>CE0</sub>    | -120 | -    | -    | V    | I <sub>c</sub> = -1mA                                 |
| Emitter-base breakdown voltage       | BV <sub>EB0</sub>    | -5   | -    | -    | V    | I <sub>E</sub> = -50μA                                |
| Collector cutoff current             | I <sub>CB0</sub>     | -    | -    | -0.5 | μA   | V <sub>CB</sub> = -100V                               |
| Emitter cutoff current               | I <sub>EB0</sub>     | -    | -    | -0.5 | μA   | V <sub>EB</sub> = -4V                                 |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | -    | -    | -0.5 | V    | I <sub>c</sub> /I <sub>B</sub> = -10mA/-1mA           |
| DC current transfer ratio            | h <sub>FE</sub>      | 180  | -    | 560  | -    | V <sub>CE</sub> = -6V, I <sub>c</sub> = -2mA          |
| Transition frequency                 | f <sub>T</sub>       | -    | 140  | -    | MHz  | V <sub>CE</sub> = -12V, I <sub>E</sub> =2mA, f=100MHz |
| Output capacitance                   | C <sub>ob</sub>      | -    | 3.2  | -    | pF   | V <sub>CB</sub> = -12V, I <sub>E</sub> =0A, f=1MHz    |

Transistors

●Electrical characteristic curves

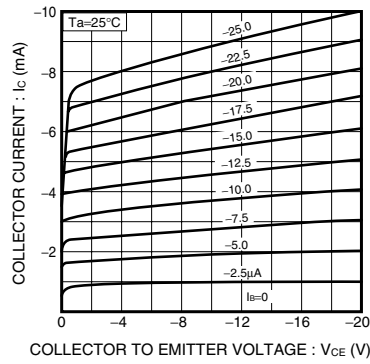


Fig.1 Ground emitter output characteristics

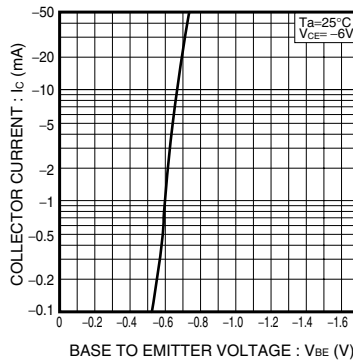


Fig.2 Ground emitter propagation characteristics

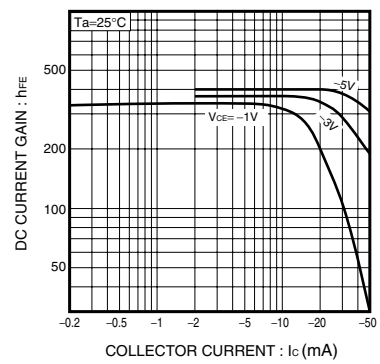


Fig.3 DC current gain vs. collector current

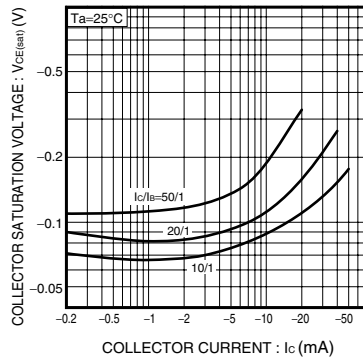


Fig.4 Collector-Emitter saturation voltage vs. collector current

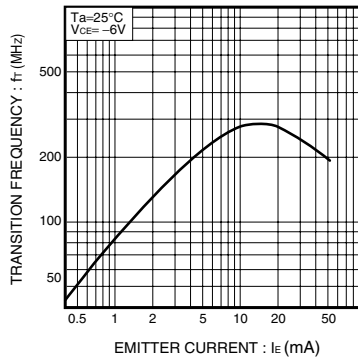


Fig.5 Transition frequency vs. emitter current

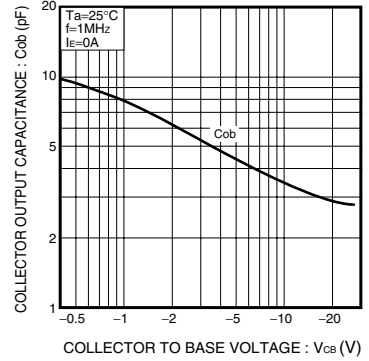


Fig.6 Collector output capacitance vs. collector-base voltage

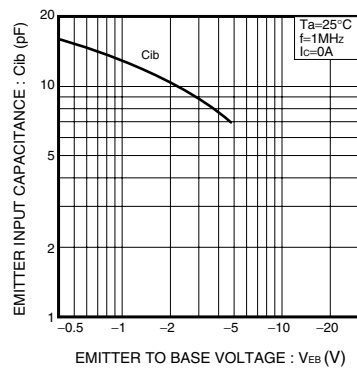


Fig.7 Emitter input capacitance vs. emitter-base voltage

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