

# 2SA2067

## Silicon PNP epitaxial planar type

Power supply for audio &amp; visual equipments

such as TVs and VCRs

Industrial equipments such as DC-DC converters

### ■ Features

- High speed switching ( $t_{stg}$ : storage time/ $t_f$ : fall time is short)
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Superior forward current transfer ratio  $h_{FE}$  linearity
- Allowing automatic insertion with radial tapering

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

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | -60         | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | -60         | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | -6          | V                |
| Collector current                     | $I_C$     | -3          | A                |
| Peak collector current                | $I_{CP}$  | -6          | A                |
| Collector power dissipation           | $P_C$     | 15          | W                |
| $T_a = 25^\circ\text{C}$              |           | 2.0         |                  |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

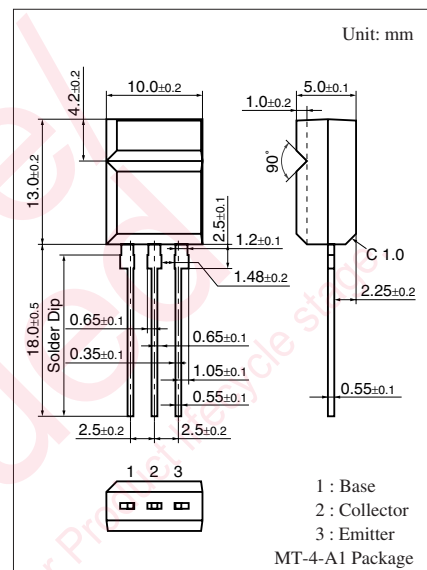
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                                    | Symbol        | Conditions                                                            | Min | Typ | Max  | Unit          |
|----------------------------------------------|---------------|-----------------------------------------------------------------------|-----|-----|------|---------------|
| Collector-emitter voltage (Base open)        | $V_{CEO}$     | $I_C = -10\text{ mA}$ , $I_B = 0$                                     | -60 |     |      | V             |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$     | $V_{CB} = -60\text{ V}$ , $I_E = 0$                                   |     |     | -100 | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = -60\text{ V}$ , $I_B = 0$                                   |     |     | -100 | $\mu\text{A}$ |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$     | $V_{EB} = -6\text{ V}$ , $I_C = 0$                                    |     |     | -1   | mA            |
| Forward current transfer ratio               | $h_{FE1}^*$   | $V_{CE} = -4\text{ V}$ , $I_C = -1\text{ A}$                          | 120 |     | 320  | —             |
|                                              | $h_{FE2}$     | $V_{CE} = -4\text{ V}$ , $I_C = -3\text{ A}$                          | 40  |     |      |               |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = -3\text{ A}$ , $I_B = -375\text{ mA}$                          |     |     | -0.8 | V             |
| Transition frequency                         | $f_T$         | $V_{CE} = -10\text{ V}$ , $I_C = -0.1\text{ A}$ , $f = 10\text{ MHz}$ |     | 90  |      | MHz           |
| Turn-on time                                 | $t_{on}$      | $I_C = -1\text{ A}$ , Resistance loaded                               |     |     | 0.3  | $\mu\text{s}$ |
| Storage time                                 | $t_{stg}$     | $I_{B1} = -0.1\text{ A}$ , $I_{B2} = 0.1\text{ A}$                    |     |     | 0.7  | $\mu\text{s}$ |
| Fall time                                    | $t_f$         | $V_{CC} = 50\text{ V}$                                                |     |     | 0.15 | $\mu\text{s}$ |

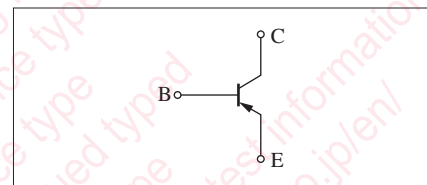
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

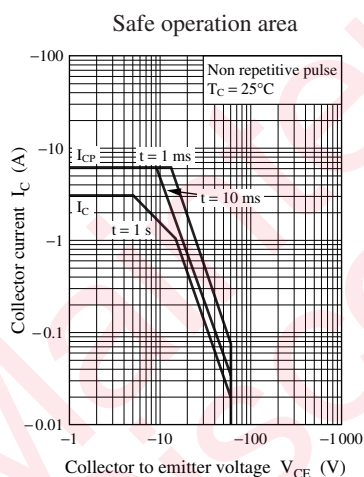
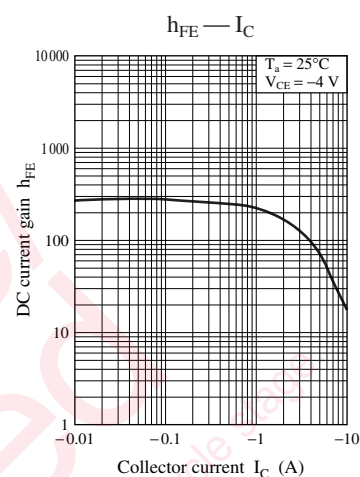
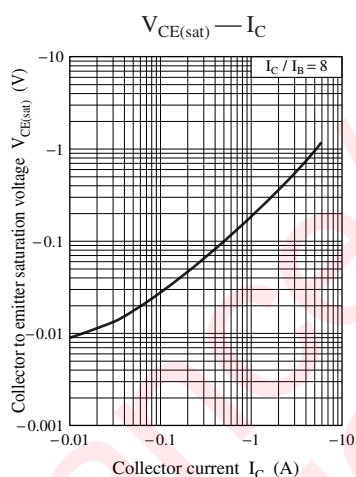
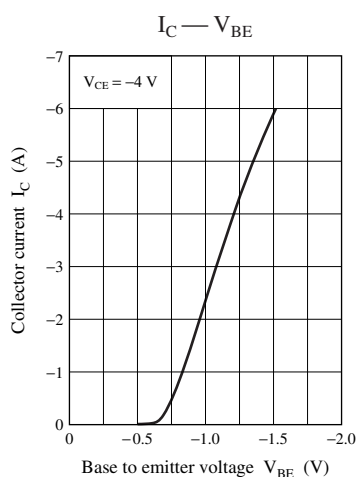
2. \*: Rank classification

| Rank      | Q          | P          |
|-----------|------------|------------|
| $h_{FE1}$ | 120 to 250 | 160 to 320 |



### Internal Connection





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