

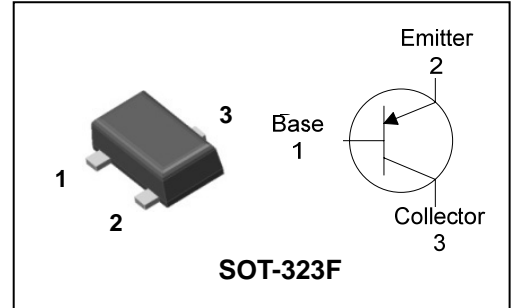
## Descriptions

- General purpose application
- Switching application

## Features

- Low Leakage current
- Low collector saturation voltage enabling low voltage operation
- Complementary pair with SBT2222AU

## PIN Connection



## Ordering Information

| Type NO.   | Marking     | Package Code |
|------------|-------------|--------------|
| SBT2907AUF | F2 □<br>① ② | SOT-323F     |

① Device Code ② Year&Week Code

## Absolute maximum ratings

 $T_a=25^{\circ}\text{C}$ 

| Characteristic            | Symbol           | Ratings   | Unit               |
|---------------------------|------------------|-----------|--------------------|
| Collector-Base voltage    | $V_{\text{CBO}}$ | -60       | V                  |
| Collector-Emitter voltage | $V_{\text{CEO}}$ | -60       | V                  |
| Emitter-base voltage      | $V_{\text{EBO}}$ | -5        | V                  |
| Collector current         | $I_{\text{C}}$   | -600      | mA                 |
| Collector dissipation     | $P_{\text{C}}^*$ | 350       | mW                 |
| Junction temperature      | $T_{\text{j}}$   | 150       | $^{\circ}\text{C}$ |
| Storage temperature range | $T_{\text{stg}}$ | -55 ~ 150 | $^{\circ}\text{C}$ |

\* : Package mounted on 99.5% alumina 10×8×0.6mm

## Electrical Characteristics

Ta=25°C

| Characteristic                       | Symbol        | Test Condition  | Min. | Typ. | Max. | Unit |
|--------------------------------------|---------------|---|------|------|------|------|
| Collector-Base breakdown voltage     | $BV_{CBO}$    | $I_C = -10\mu A, I_E = 0$   | -60  | -    | -    | V    |
| Collector-Emitter breakdown voltage  | $BV_{CEO}$    | $I_C = -1mA, I_B = 0$   | -60  | -    | -    | V    |
| Emitter-Base breakdown voltage       | $BV_{EBO}$    | $I_E = -10\mu A, I_C = 0$   | -5   | -    | -    | V    |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -60V, I_E = 0$  | -    | -    | -20  | nA   |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -10V, I_C = -10mA$  | 100  | -    | -    | -    |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -150mA, I_B = -15mA$   | -    | -    | -0.4 | V    |
| Transition frequency                 | $f_T$         | $V_{CE} = -5.0V, I_C = -20mA,$<br>$f = 100MHz$                              | 200  | -    | -    | MHz  |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$  | -    | -    | 8    | pF   |
| Turn-on time                         | $t_{on}$      | $V_{CC} = -30V_{dc}, I_C = -150mA_{dc},$<br>$I_{B1} = -15mA_{dc}$           | -    | -    | 45   | ns   |
| Delay time                           | $t_d$         |   | -    | -    | 10   | ns   |
| Rise time                            | $t_r$         |   | -    | -    | 40   | ns   |
| Turn-off time                        | $t_{off}$     | $V_{CC} = -6.0V_{dc}, I_C = -150mA_{dc},$<br>$I_{B1} = I_{B2} = -15mA_{dc}$ | -    | -    | 100  | ns   |
| Storage time                         | $t_s$         |   | -    | -    | 80   | ns   |
| Fall time                            | $t_f$         |   | -    | -    | 30   | ns   |

Electrical Characteristic Curves

Fig. 1  $P_C$ - $T_a$

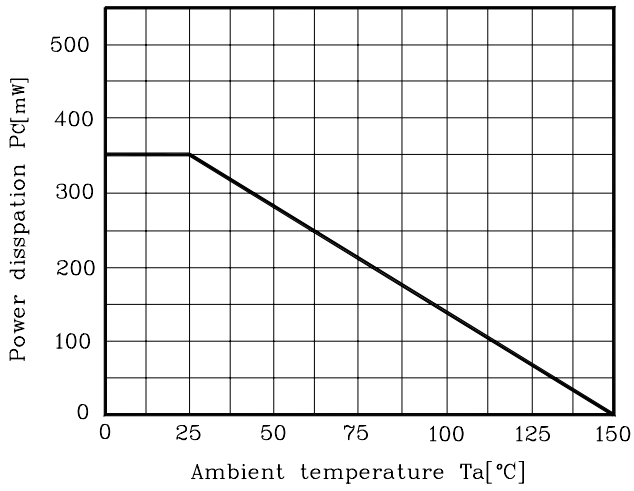


Fig. 2  $h_{FE}$ - $I_C$

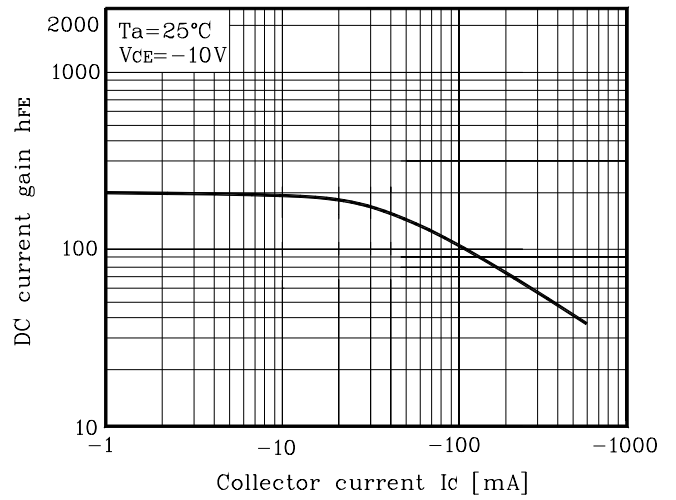


Fig. 3  $V_{CE(sat)}$ - $I_C$

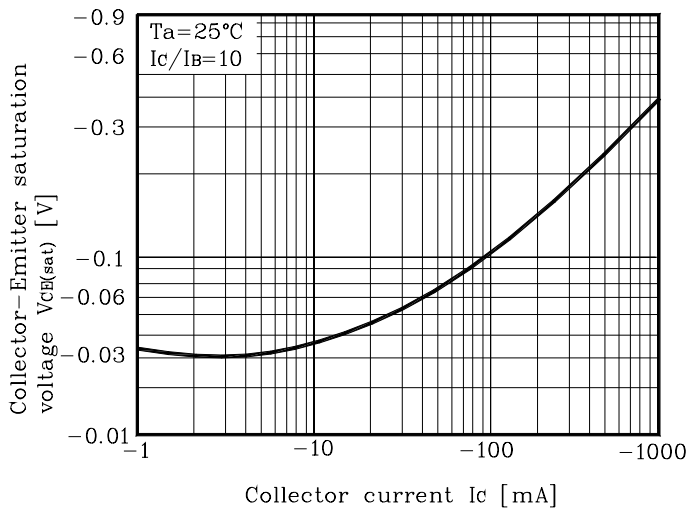
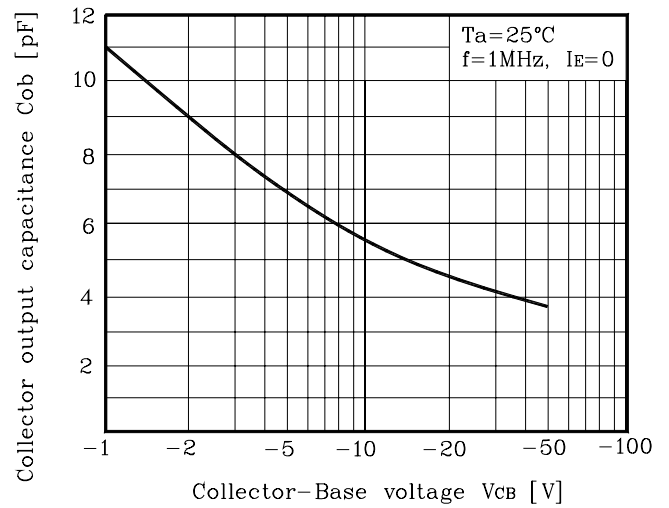
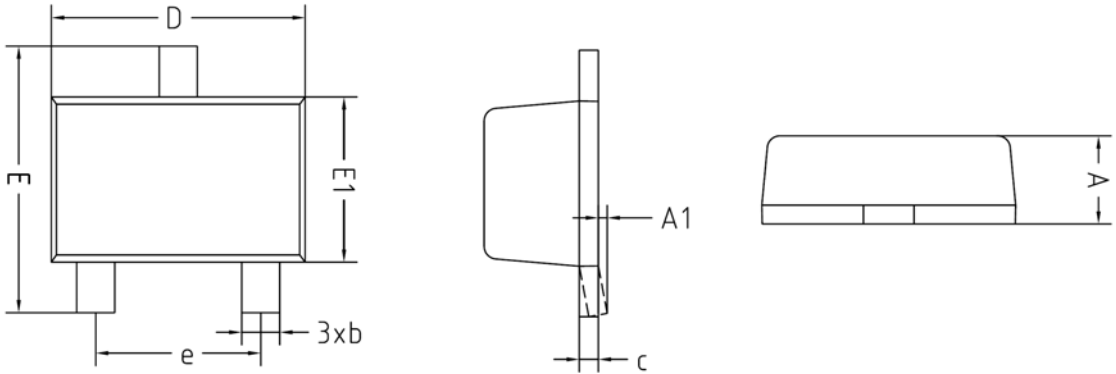


Fig. 4  $C_{ob}$ - $V_{CB}$

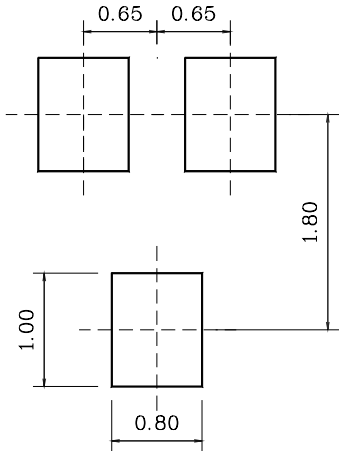


**Outline Dimension**



| SYMBOL | MILLIMETERS |         |         | NOTE |
|--------|-------------|---------|---------|------|
|        | MINIMUM     | NOMINAL | MAXIMUM |      |
| A      | 0.60        | -       | 0.80    |      |
| A1     | 0.00        | -       | 0.10    |      |
| b      | 0.30        | -       | 0.40    |      |
| c      | 0.08        | -       | 0.16    |      |
| D      | 1.90        | 2.00    | 2.10    |      |
| E      | 1.95        | 2.10    | 2.25    |      |
| E1     | 1.20        | 1.30    | 1.40    |      |
| e      | 1.30BSC     |         |         |      |

**※Recommend PCB solder land [Unit: mm]**



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