

Description

- General purpose amplifier
- High voltage application

Features

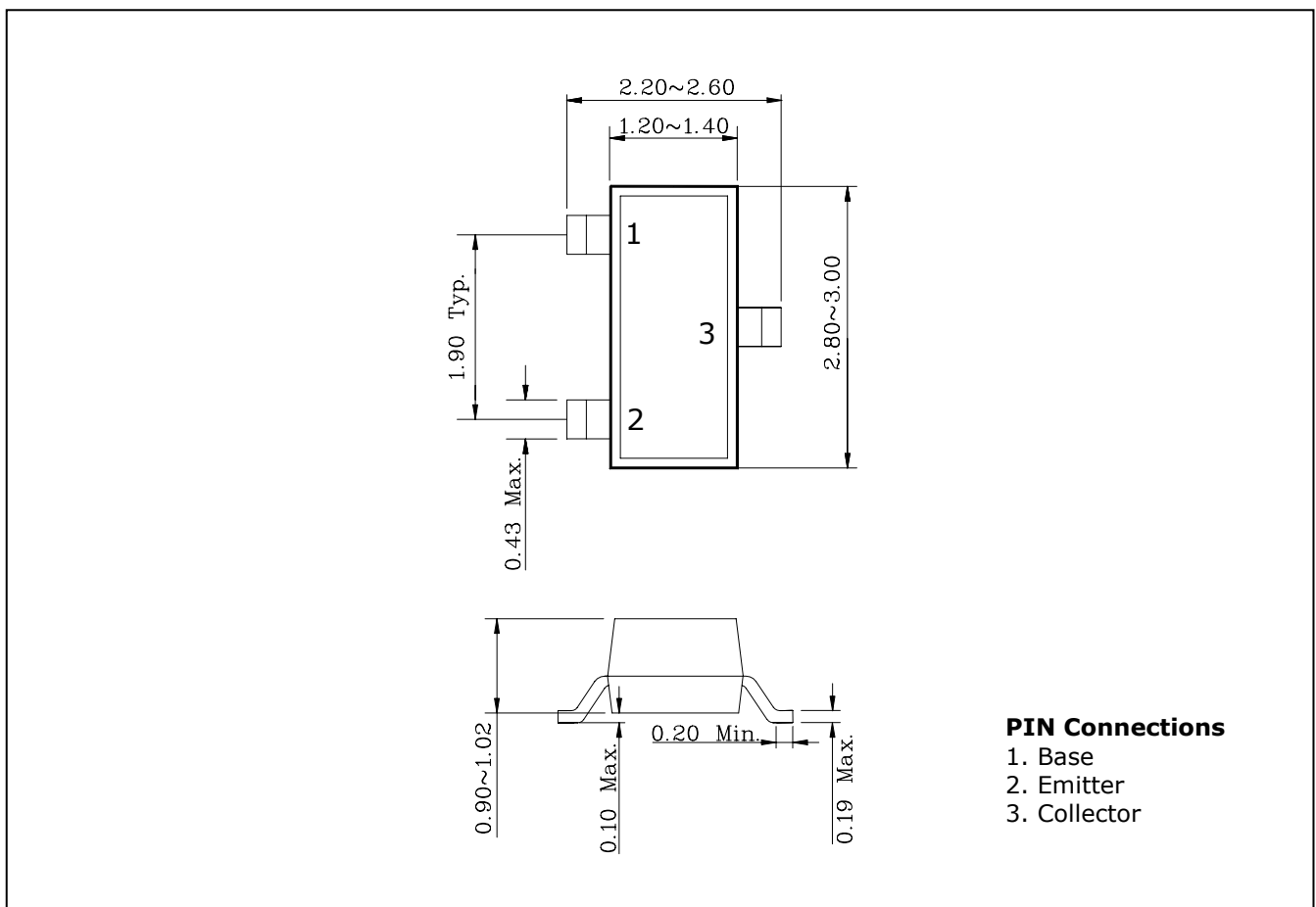
- High collector breakdown voltage : $V_{CBO} = -160V$, $V_{CEO} = -160V$
- Low collector saturation voltage : $V_{CE(sat)} = -0.5V(MAX.)$
- Complementary pair with SBT5551

Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| SBT5401 | NFN | SOT-23 |

Outline Dimensions

unit : mm



Absolute maximum ratings

(Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|---------------------------|-----------|---------|------|
| Collector-Base voltage | V_{CBO} | -160 | V |
| Collector-Emitter voltage | V_{CEO} | -160 | V |
| Emitter-Base voltage | V_{EBO} | -5 | V |
| Collector current | I_C | -600 | mA |
| Collector dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55~150 | °C |

Electrical Characteristics

(Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------------|--------------------|------------------------------------|------|------|------|------|
| Collector-Base breakdown voltage | BV_{CBO} | $I_C = -100\mu A, I_E = 0$ | -160 | - | - | V |
| Collector-Emitter breakdown voltage | BV_{CEO} | $I_C = -1mA, I_B = 0$ | -160 | - | - | V |
| Emitter-Base breakdown voltage | BV_{EBO} | $I_E = -10\mu A, I_C = 0$ | -5 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = -120V, I_E = 0$ | - | - | -100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -3V, I_C = 0$ | - | - | -100 | nA |
| DC current gain | $h_{FE(1)}$ | $V_{CE} = -5V, I_C = -1mA$ | 50 | - | - | - |
| DC current gain | $h_{FE(2)}$ | $V_{CE} = -5V, I_C = -10mA$ | 60 | - | 240 | - |
| DC current gain | $h_{FE(3)}$ | $V_{CE} = -5V, I_C = -50mA$ | 50 | - | - | - |
| Collector-Emitter saturation voltage | $V_{CE(sat)(1)}^*$ | $I_C = -10mA, I_B = -1mA$ | - | - | -0.2 | V |
| Collector-Emitter saturation voltage | $V_{CE(sat)(2)}^*$ | $I_C = -50mA, I_B = -5mA$ | - | - | -0.5 | V |
| Base-Emitter saturation voltage | $V_{BE(sat)(1)}^*$ | $I_C = -10mA, I_B = -1mA$ | - | - | -1 | V |
| Base-Emitter saturation voltage | $V_{BE(sat)(2)}^*$ | $I_C = -50mA, I_B = -5mA$ | - | - | -1 | V |
| Transition frequency | f_T | $V_{CE} = -10V, I_C = -10mA$ | 100 | - | 400 | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | - | - | 6 | pF |

* : Pulse Tester : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

Electrical Characteristic Curves

Fig. 1 $h_{FE} - I_C$

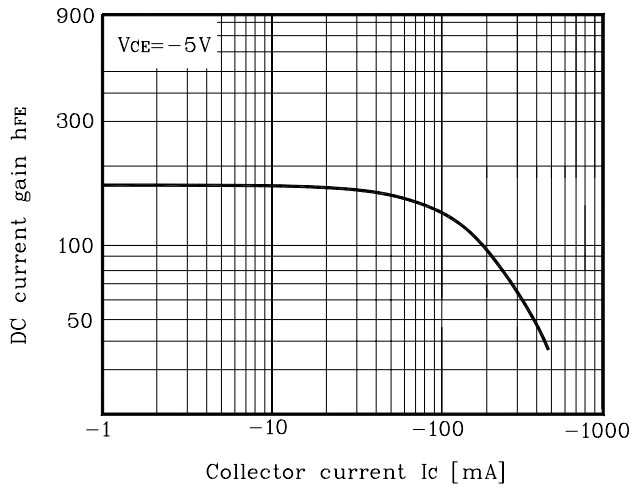


Fig. 2 $I_C - V_{BE}$

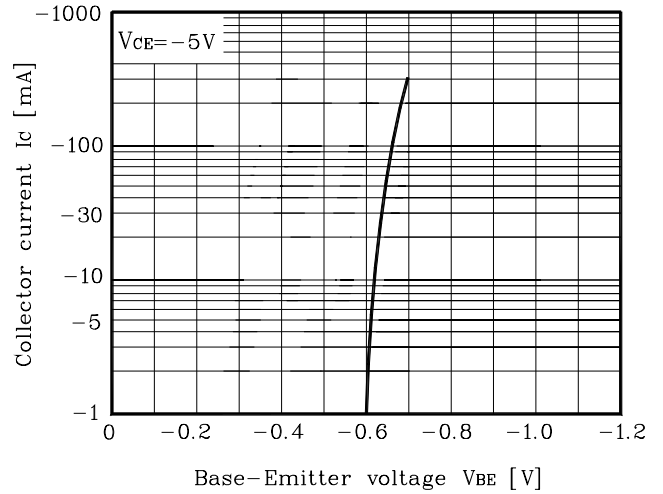


Fig. 3 $f_T - I_C$

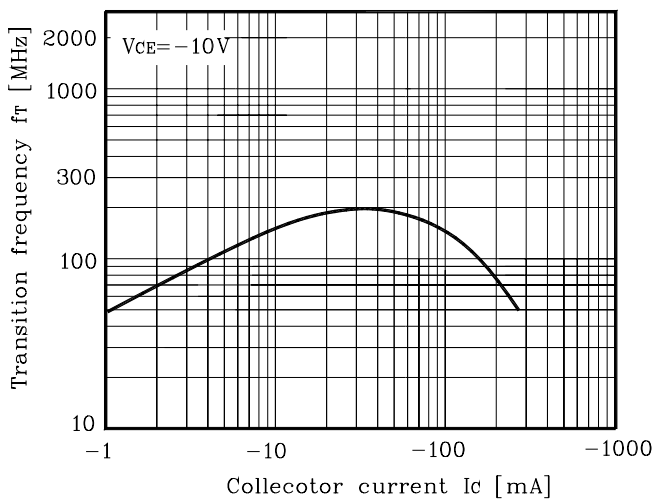


Fig. 4 $V_{CE(sat)}, V_{BE(sat)} - I_C$

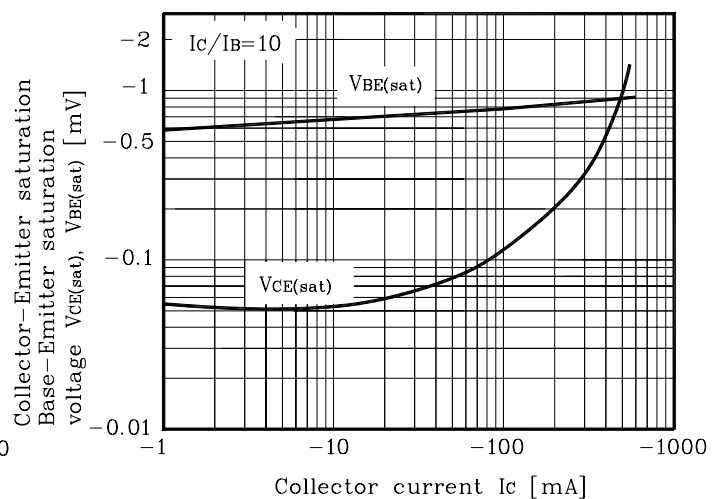
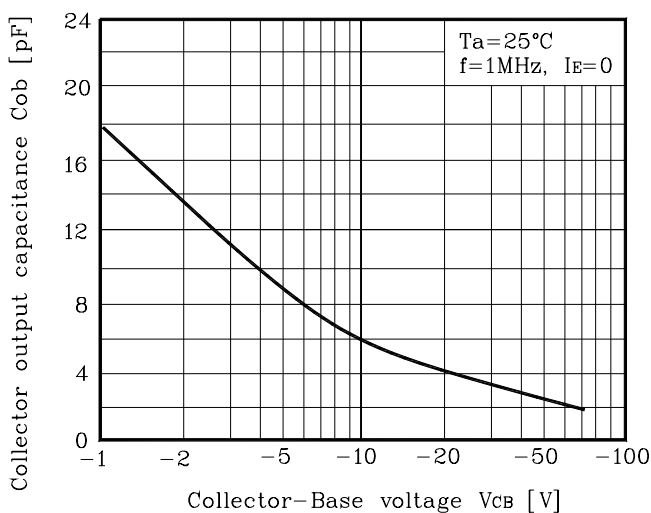


Fig. 5 $C_{ob} - V_{CB}$



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