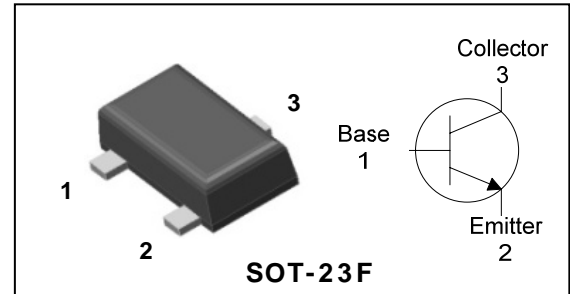


Features

- Extremely low collector-to-emitter saturation voltage
($V_{CE(SAT)} = 0.1V$ Typ. @ $I_C/I_B = 100mA/10mA$)
- Suitable for low voltage large current drivers
- Complementary pair with DP030S
- Switching Application

PIN Connection



Ordering Information

| Type NO. | Marking | Package Code |
|----------|-------------------------------------|--------------|
| DN030S | N01 <input type="checkbox"/> ① ② | SOT-23F |

① Device Code ② Year&Week Code

Absolute maximum ratings

($T_a = 25^\circ C$)

| Characteristic | Symbol | Ratings | Unit |
|---------------------------|-----------|-----------|------------|
| Collector-Base voltage | V_{CBO} | 15 | V |
| Collector-Emitter voltage | V_{CEO} | 12 | V |
| Emitter-Base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 300 | mA |
| Collector dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 150 | $^\circ C$ |
| Storage temperature | T_{stg} | -55 ~ 150 | $^\circ C$ |

Electrical Characteristics

($T_a = 25^\circ C$)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------------|----------------|-----------------------------------|------|------|------|---------|
| Collector-Base breakdown voltage | BV_{CBO} | $I_C = 50\mu A, I_E = 0$ | 15 | - | - | V |
| Collector-Emitter breakdown voltage | BV_{CEO} | $I_C = 1mA, I_B = 0$ | 12 | - | - | V |
| Emitter-Base breakdown voltage | BV_{EBO} | $I_E = 50\mu A, I_C = 0$ | 5 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = 12V, I_E = 0$ | - | - | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | - | - | 0.1 | μA |
| DC current gain | h_{FE1} | $V_{CE} = 1V, I_C = 100mA$ | 200 | - | 450 | - |
| | h_{FE2} | $V_{CE} = 1V, I_C = 300mA$ | 70 | - | - | - |
| Collector-Emitter saturation voltage | $V_{CE(sat1)}$ | $I_C = 100mA, I_B = 10mA$ | - | - | 0.2 | V |
| | $V_{CE(sat2)}$ | $I_C = 300mA, I_B = 30mA$ | - | - | 0.5 | V |
| Base-Emitter saturation voltage | $V_{BE(sat1)}$ | $I_C = 100mA, I_B = 10mA$ | - | - | 1.2 | V |
| | $V_{BE(sat2)}$ | $I_C = 300mA, I_B = 30mA$ | - | - | 1.7 | V |
| Transition frequency | f_T | $V_{CE} = 5V, I_C = 10mA$ | - | 300 | - | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | - | 3 | - | PF |

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

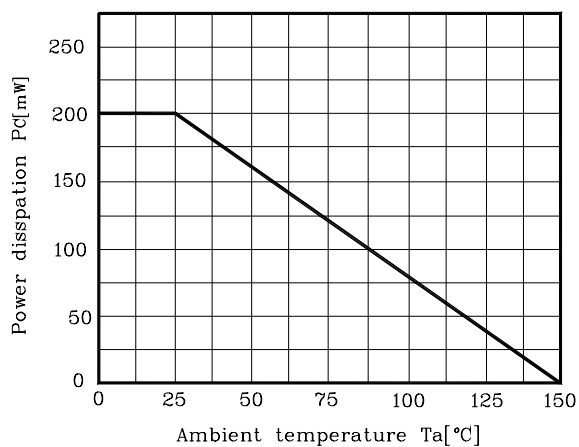


Fig. 2 $I_C - V_{BE}$

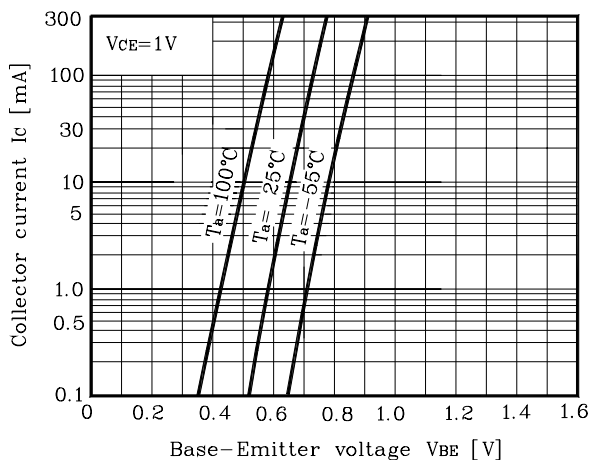


Fig. 3 $h_{FE} - I_C$

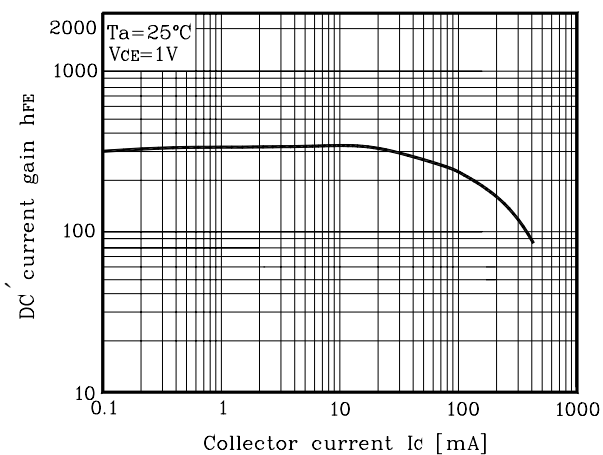


Fig. 4 $I_C - V_{CE}$

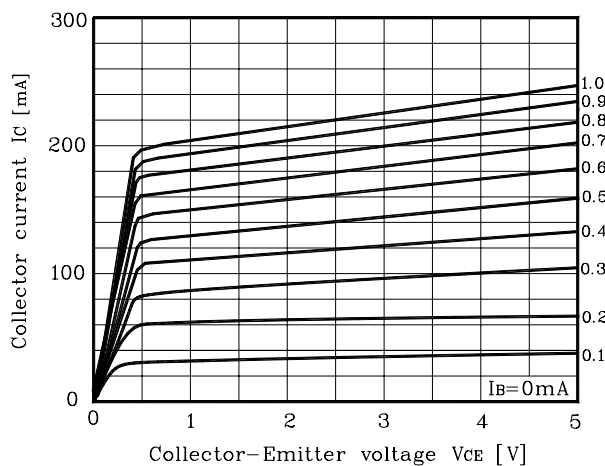
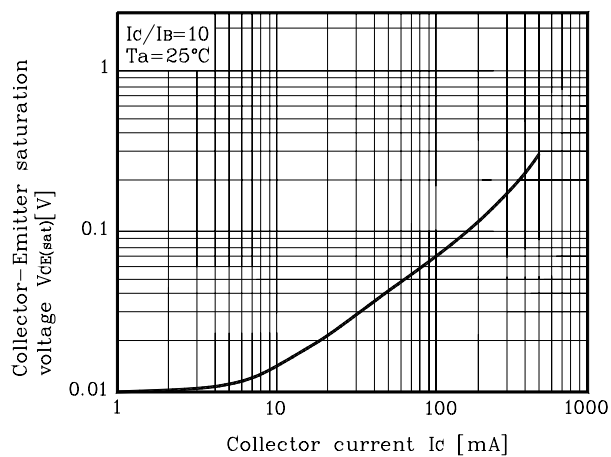
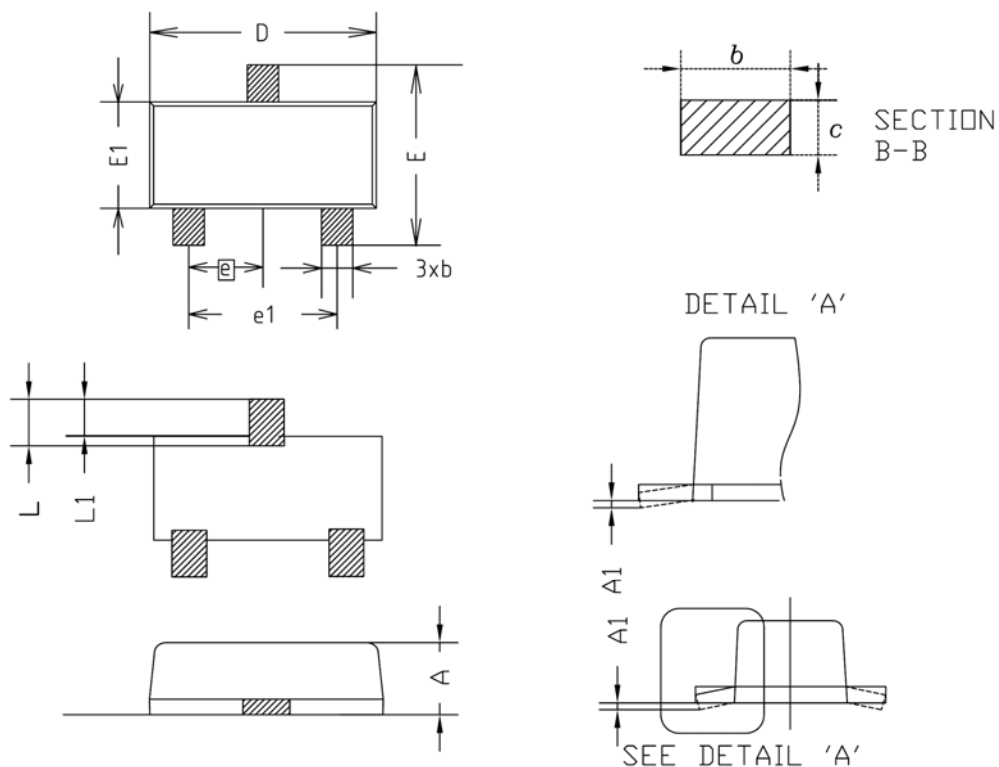


Fig. 5 $V_{CE(sat)} - I_C$

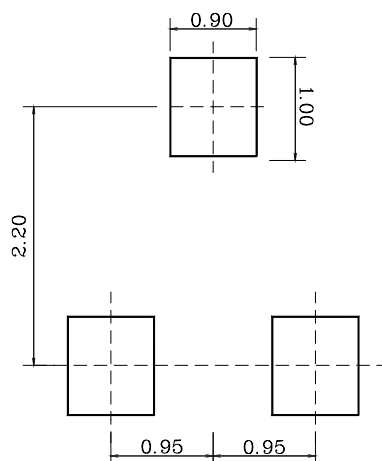


Outline Dimension



| SYMBOL | MILLIMETER(mm) | | | NOTE |
|--------|----------------|---------|---------|------|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | 0.80 | 0.90 | 1.00 | |
| A1 | 0.00 | - | 0.10 | |
| b | 0.35 | 0.40 | 0.45 | |
| c | 0.10 | 0.15 | 0.20 | |
| D | 2.80 | 2.90 | 3.00 | |
| E | 2.30 | 2.40 | 2.50 | |
| E1 | 1.50 | 1.60 | 1.70 | |
| e | 0.95BSC | | | |
| e1 | 1.80 | 1.90 | 2.00 | |
| L | 0.48 | 0.58 | 0.68 | |
| L1 | 0.30 | - | 0.50 | |

※Recommend PCB solder land [Unit: mm]



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