

SS8050

General Purpose Transistors NPN Silicon

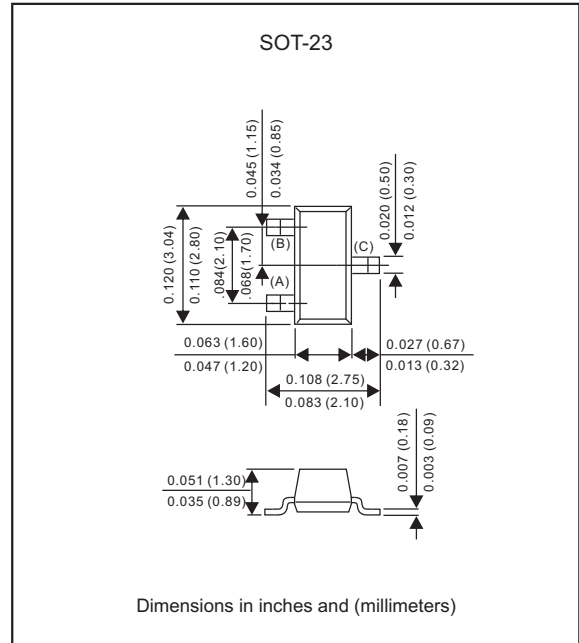
Features

- High current capacity in compact package $I_c = 1.5A$.
- Epitaxial planar type
- Pb-Free package is available
- Suffix "-H" indicates Halogen free parts, ex. SS8050-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram

Package outline



Maximum ratings (AT $T_A=25^\circ C$ unless otherwise noted)

| PARAMETER | Symbol | MAX. | UNIT |
|------------------------------|-----------|------|------|
| Collector-base voltage | V_{CBO} | 40 | V |
| Collector-emitter voltage | V_{CEO} | 25 | V |
| Emitter-base voltage | V_{EBO} | 5.0 | V |
| Collector current-continuoun | I_c | 1500 | mAdc |

Thermal Characteristics

| PARAMETER | Symbol | MIN. | TYP. | MAX. | UNIT |
|---|-----------------------------|-----------------|------|---------------------------|--------------|
| Total device dissipation FR-5 board (1) | $T_A = 25^\circ C$ P_D | | | 225 | mW |
| | | | | Derate above $25^\circ C$ | 1.8 |
| Thermal resistance | Junction to ambient | $R_{\theta JA}$ | | 556 | $^\circ C/W$ |
| Total device dissipation alumina substrate(2) | $T_A = 25^\circ C$ P_D | | | 300 | mW |
| | | | | Derate above $25^\circ C$ | 2.4 |
| Thermal resistance | Junction to ambient | $R_{\theta JA}$ | | 417 | $^\circ C/W$ |
| Operating Junction temperature Range | T_J | -55 | | +150 | $^\circ C$ |
| Storage temperature Range | T_{STG} | -55 | | +150 | $^\circ C$ |

1.FR-5 = 1.0 X 0.75 X 0.062 in.

2.Alumina = 0.4 X 0.3 X 0.024 in. 99.5% alumina.

SS8050**Electrical Characteristics** (AT $T_A = 25^\circ\text{C}$ unless otherwise noted)**Off characteristics**

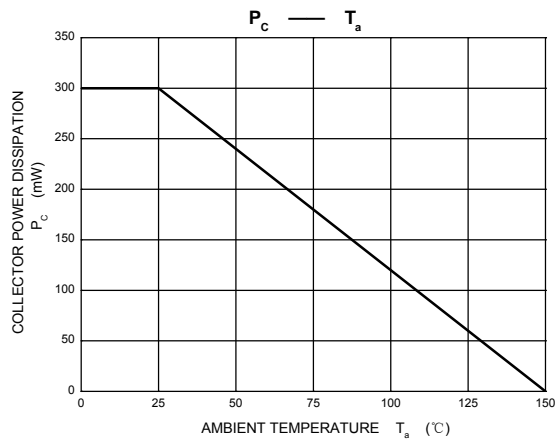
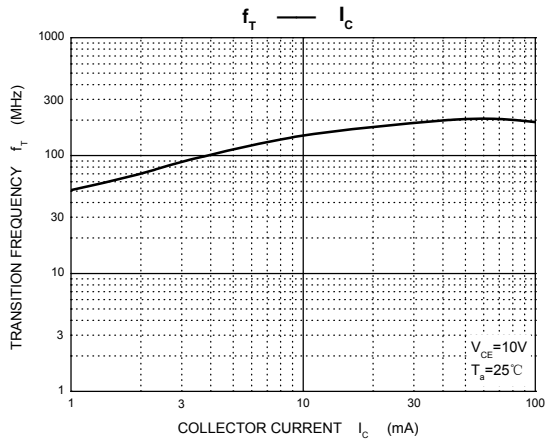
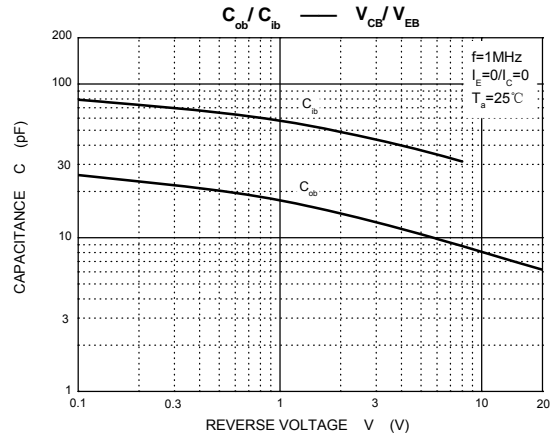
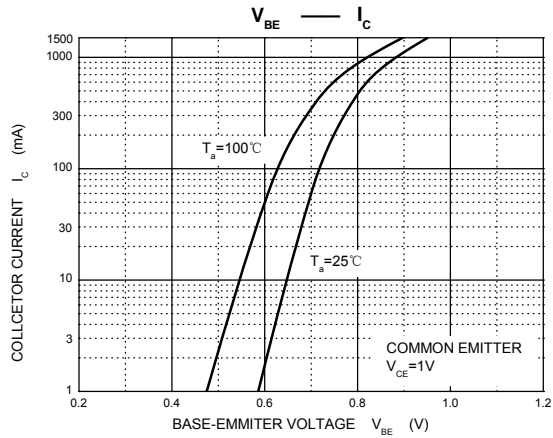
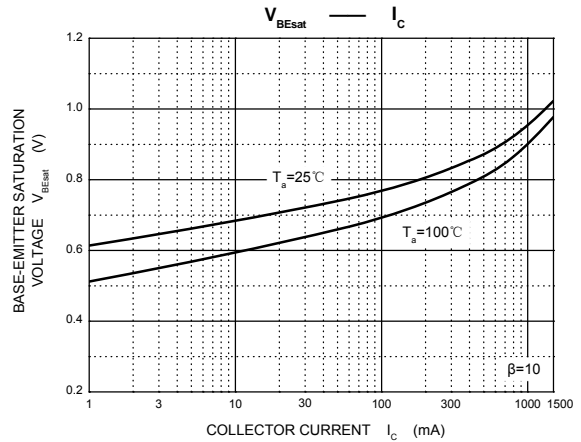
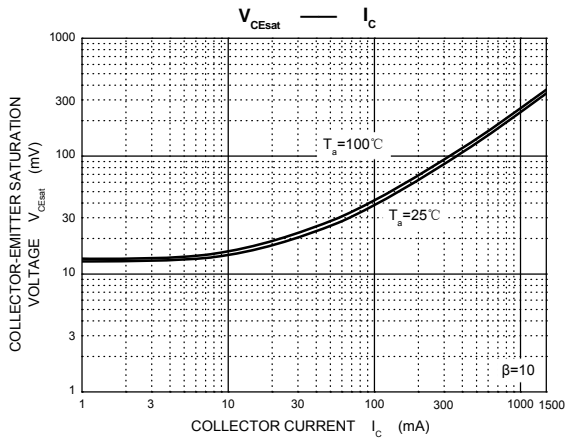
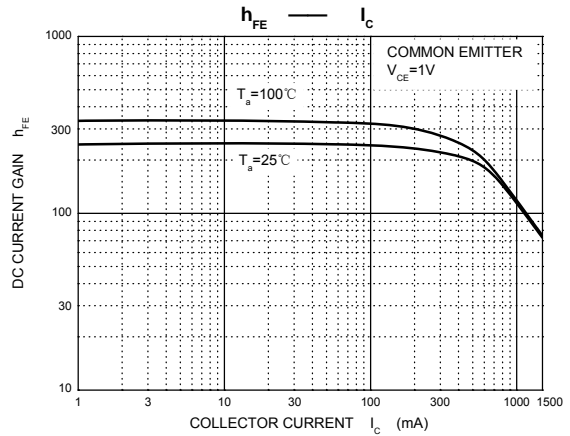
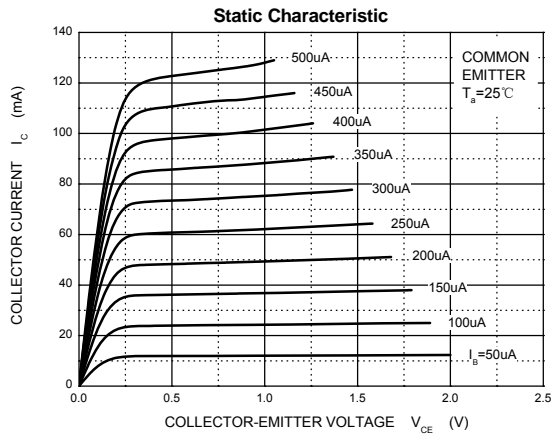
| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|------------------------|---------------|------|------|------|------|
| Collector-base breakdown voltage | $I_c = 100\mu\text{A}$ | $V_{(BR)CBO}$ | 40 | | | V |
| Collector-emitter breakdown voltage | $I_c = 1.0\text{mA}$ | $V_{(BR)CEO}$ | 25 | | | V |
| Emitter-base breakdown voltage | $I_E = 100\mu\text{A}$ | $V_{(BR)EBO}$ | 5.0 | | | V |
| Collector cutoff current | $V_{CB} = 35\text{V}$ | I_{CBO} | | | 150 | nA |
| Emitter cutoff current | $V_{EB} = 4.0\text{V}$ | I_{EBO} | | | 150 | nA |

On characteristics

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---|------------------|------|------|------|------|
| DC current gain | $I_c = 100\text{mA}$, $V_{CE} = 1.0\text{V}$ | h_{FE}^{*Note} | 80 | | 400 | |
| Collector-emitter saturation voltage | $I_c = 800\text{mA}$, $I_B = 80\text{mA}$ | $V_{CE(sat)}$ | | | 0.5 | V |

| Note | * | L | H | J |
|------|----------|--------|---------|---------|
| | h_{FE} | 80~200 | 200~350 | 300~400 |

Rating and characteristic curves



SS8050

Pinning information

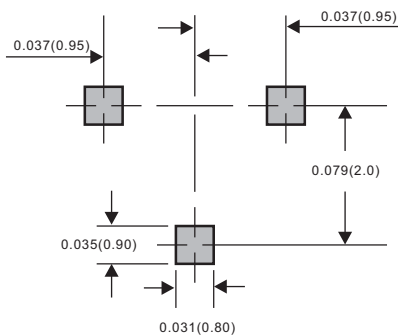
| Pin | Simplified outline | Symbol |
|---|--------------------|--------|
| PinB Base PinC Collector PinE Emitter | | |

Marking

| Type number | Marking code |
|-------------|--------------|
| SS8050 | Y1 |

Suggested solder pad layout

SOT-23



Dimensions in inches and (millimeters)

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOT-23 | 7" | 3,000 | 4.0 | 30,000 | 183*123*183 | 178 | 382*257*387 | 240,000 | 11.6 |

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