



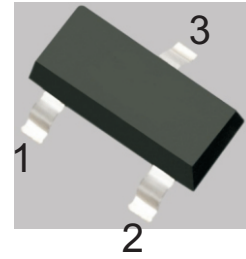
S8050

NPN TRANSISTOR

FEATURES

- Complimentary to S8550
- Collector Current:  $I_C=0.5A$

SOT-23



1.BASE  
2.EMITTER  
3.COLLECTOR

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

| Parameter  | Symbol         | Value    | Unit |
|--|----------------|----------|------|
| Collector-Base Voltage                           | $V_{CB0}$      | 40       | V    |
| Collector-Emitter Voltage                        | $V_{CEO}$      | 25       | V    |
| Emitter-Base Voltage                             | $V_{EBO}$      | 5        | V    |
| Collector Current — Continuous                   | $I_C$          | 500      | mA   |
| Collector Power Dissipation                      | $P_C$          | 300      | mW   |
| Thermal Resistance From Junction To Ambient      | $R_{thJA}$     | 417      | °C/W |
| Operation Junction and Storage Temperature Range | $T_J, T_{stg}$ | -55~+150 | °C   |

CLASSIFICATION OF  $h_{FE1}$

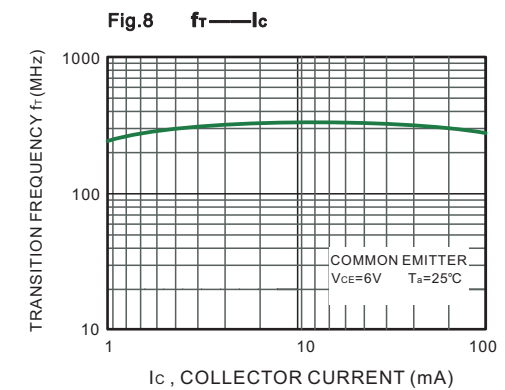
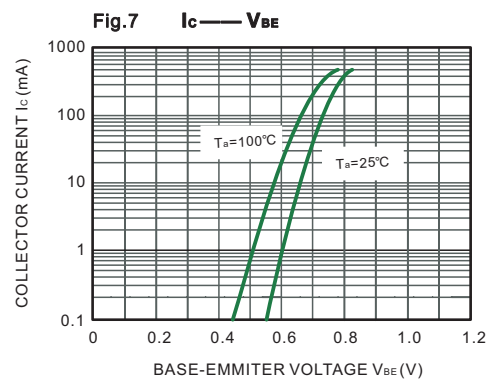
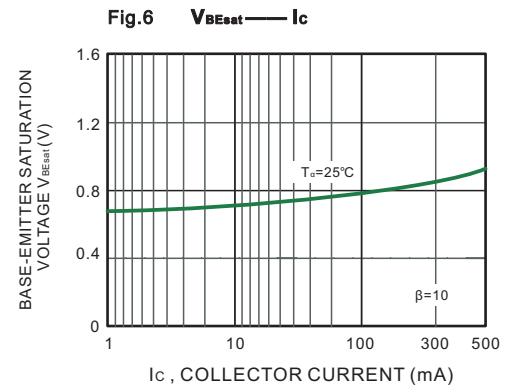
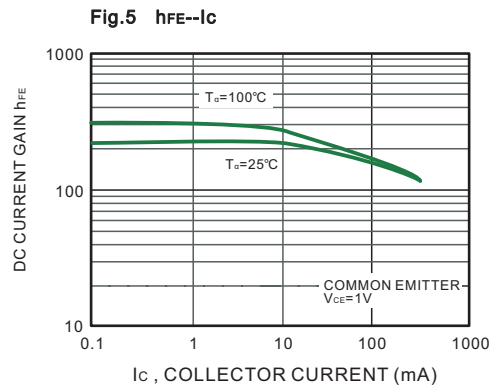
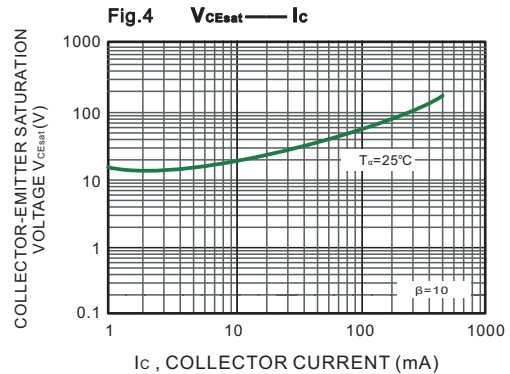
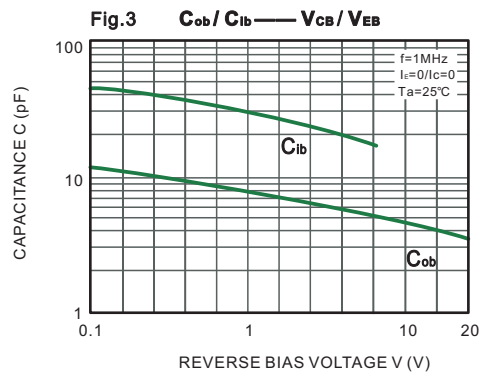
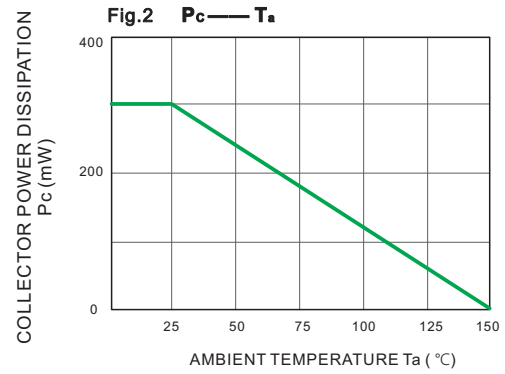
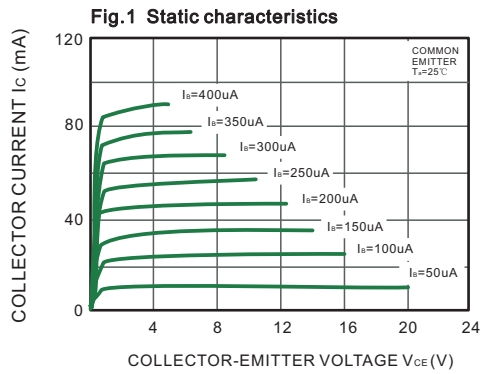
| Rank  | L       | H       | J       |
|-------|---------|---------|---------|
| Range | 120-200 | 200-350 | 300-400 |

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

| Parameter                            | Symbol        | Test conditions                      | Min | Typ | Max | Unit    |
|--------------------------------------|---------------|--------------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 100\mu A, I_E = 0$            | 40  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 1\text{ mA}, I_B = 0$         | 25  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 100\mu A, I_C = 0$            | 5   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 40V, I_E = 0$              |     |     | 0.1 | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE} = 20V, I_B = 0$              |     |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$               |     |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE1}$     | $V_{CE} = 1V, I_C = 50mA$            | 120 |     | 400 |         |
|                                      | $h_{FE2}$     | $V_{CE} = 1V, I_C = 500mA$           | 50  |     |     |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500mA, I_B = 50mA$            |     |     | 0.6 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 500mA, I_B = 50mA$            |     |     | 1.2 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = 6V, I_C = 20mA, f = 30MHz$ | 150 |     |     | MHz     |

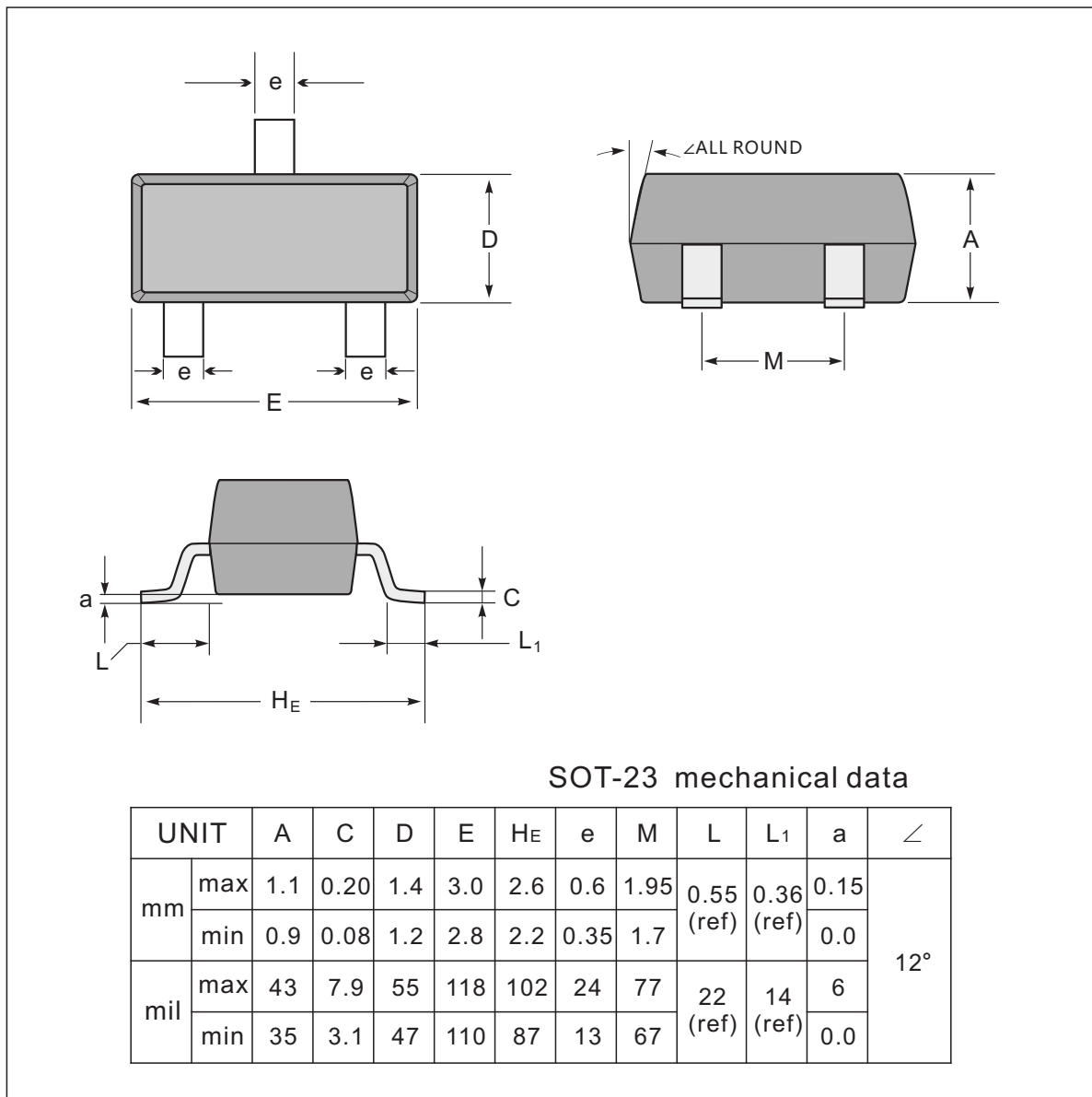


### TYPICAL CHARACTERISTICS

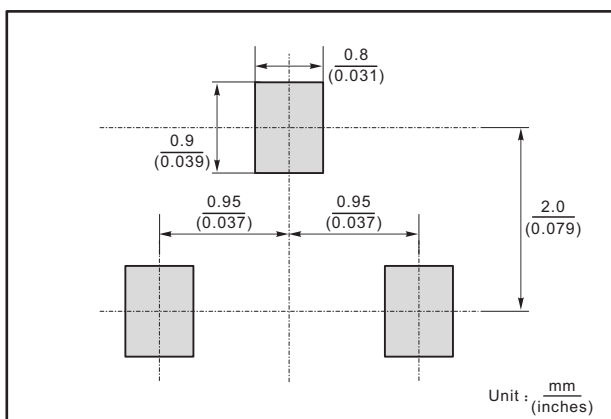




### SOT-23 Package Outline Dimensions



#### The recommended mounting pad size



#### Marking

| Type number | Marking code |
|-------------|--------------|
| S8050       | J3Y          |

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