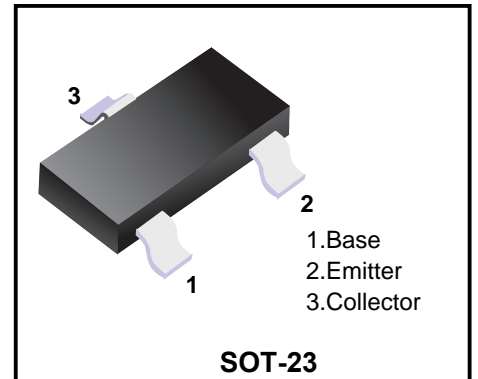


**NPN Transistors**

**Features**

- Collector Current:  $I_c=0.5A$



**Absolute Maximum Ratings (Ta=25°C)**

| Parameter                     | Symbol           | Rating     | Unit |
|-------------------------------|------------------|------------|------|
| Collector-Base Voltage        | V <sub>CB0</sub> | 40         | V    |
| Collector-Emitter Voltage     | V <sub>CEO</sub> | 25         | V    |
| Emitter-Base Voltage          | V <sub>EB0</sub> | 5          | V    |
| Collector Current -Continuous | I <sub>c</sub>   | 0.5        | A    |
| Collector Dissipation         | P <sub>c</sub>   | 0.3        | W    |
| Junction Temperature          | T <sub>j</sub>   | 150        | °C   |
| Storage Temperature           | T <sub>stg</sub> | -55 to 150 | °C   |

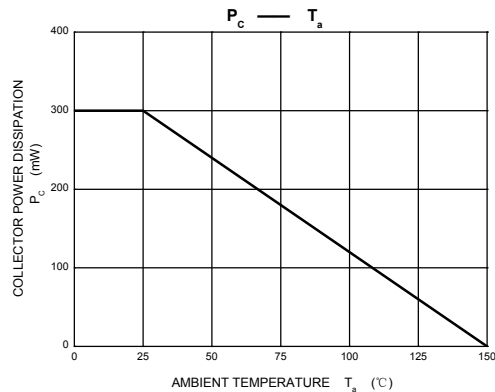
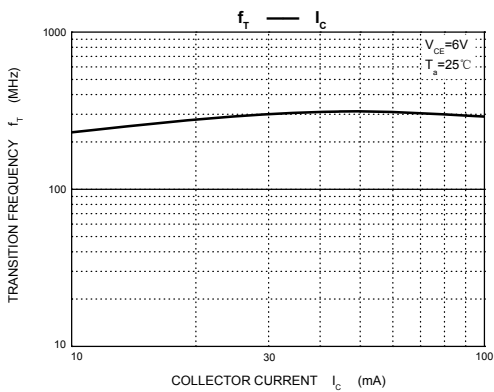
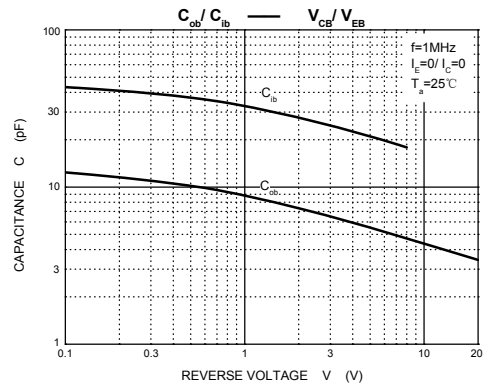
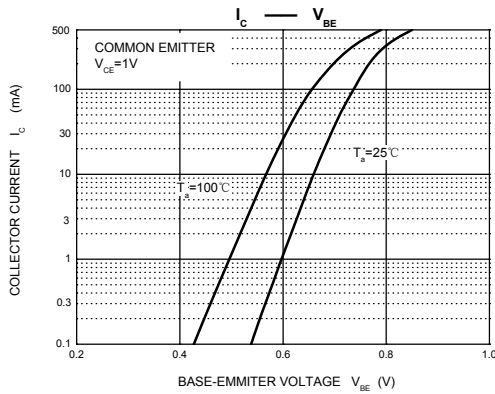
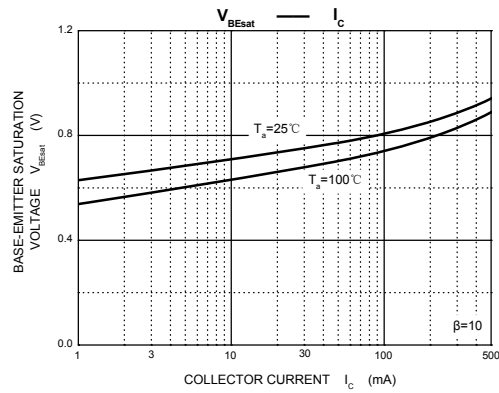
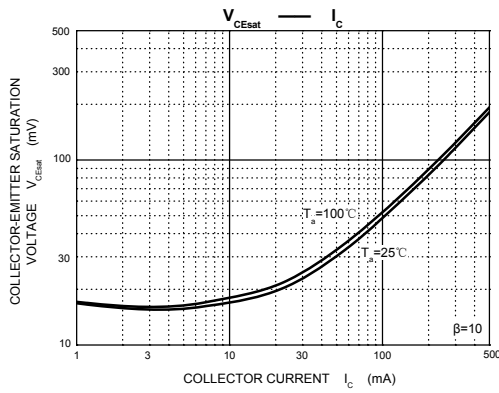
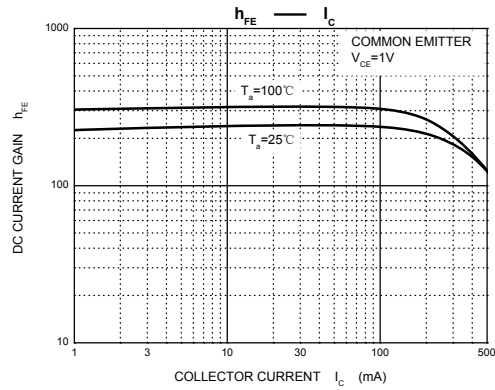
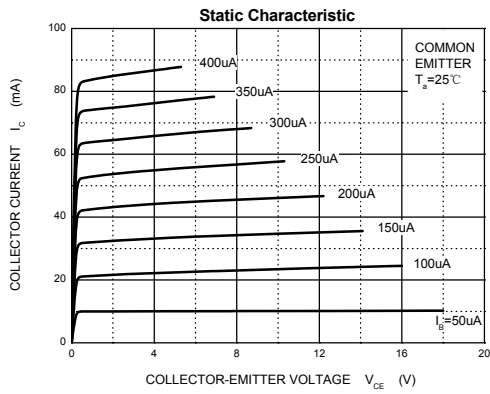
**Electrical Characteristics (Ta=25°C unless otherwise specified.)**

| Parameter                            | Symbol               | Testconditions                                            | Min | Typ | Max | Unit    |
|--------------------------------------|----------------------|-----------------------------------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | V <sub>CB0</sub>     | I <sub>c</sub> = 100 $\mu$ A, I <sub>E</sub> = 0          | 40  |     |     | V       |
| Collector-emitter breakdown voltage  | V <sub>CEO</sub>     | I <sub>c</sub> = 1mA, I <sub>B</sub> = 0                  | 25  |     |     | V       |
| Emitter-base Breakdown voltage       | V <sub>EB0</sub>     | I <sub>E</sub> = 100 $\mu$ A, I <sub>C</sub> = 0          | 5   |     |     | V       |
| Collector-base cut-off current       | I <sub>CB0</sub>     | V <sub>CB</sub> = 40 V, I <sub>E</sub> = 0                |     |     | 0.1 | $\mu$ A |
| Collector-emitter cut-off current    | I <sub>CEO</sub>     | V <sub>CE</sub> = 20 V, I <sub>B</sub> = 0                |     |     | 1   | $\mu$ A |
| Emitter-base cut-off current         | I <sub>EB0</sub>     | V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0                 |     |     | 0.1 | $\mu$ A |
| DC current gain                      | h <sub>FE</sub>      | V <sub>CE</sub> = 1 V, I <sub>c</sub> = 50 mA             | 120 |     | 400 |         |
|                                      |                      | V <sub>CE</sub> = 1 V, I <sub>c</sub> = 500 mA            | 50  |     |     |         |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>c</sub> = 500 mA, I <sub>B</sub> = 50 mA           |     |     | 0.6 | V       |
| Base-emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>c</sub> = 500 mA, I <sub>B</sub> = 50 mA           |     |     | 1.2 | V       |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> = 6 V, I <sub>c</sub> = 20 mA, f = 30 MHz | 150 |     |     | MHz     |

**hFE Classification**

| Type    | S8050   | S8050-L | S8050-H | S8050-J |
|---------|---------|---------|---------|---------|
| Range   | 200-350 | 120-200 | 144-202 | 300-400 |
| Marking | J3Y     |         |         |         |

**Typical Characteristics**



**Ordering information**

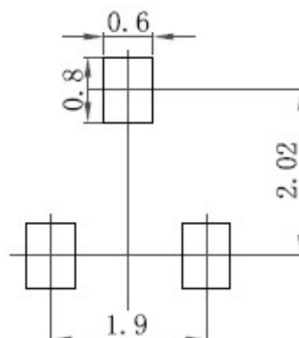
| Package | Packing Description | Base Quantity | Packing Quantity              |
|---------|---------------------|---------------|-------------------------------|
| SOT-23  | Tape/Reel,7"reel    | 3000pcs/Reel  | 24000PCS/Box 120000PCS/Carton |

**Package Dimensions**

**SOT-23**

| Dim. | Millimeter (mm) |      | mil  |      |
|------|-----------------|------|------|------|
|      | Min.            | Max. | Min. | Max. |
| A    | 0.9             | 1.15 | 35   | 45   |
| A1   | 0.1             |      | 3.9  |      |
| bp   | 0.38            | 0.48 | 15   | 19   |
| C    | 0.09            | 0.15 | 3.54 | 5.9  |
| D    | 2.8             | 3.0  | 110  | 118  |
| E    | 1.2             | 1.4  | 47   | 55   |
| E    | 1.9             |      | 75   |      |
| E1   | 0.95            |      | 37   |      |
| HE   | 2.1             | 2.55 | 83   | 100  |
| Lp   | 0.15            | 0.45 | 5.9  | 18   |
| Q    | 0.45            | 0.55 | 18   | 22   |
| v    | 0.2             |      | 7.9  |      |
| W    | 0.1             |      | 4    |      |

**The recommended mounting pad size**



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