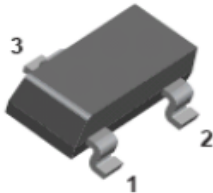
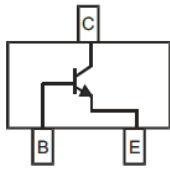


## NPN General Purpose Amplifier



**SOT-23**

### Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- Marking:

|         |         |
|---------|---------|
| S8050-L | J3Y • L |
| S8050-H | J3Y     |

### ■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Item                           | Symbol    | Unit | Conditions | Value       |
|--------------------------------|-----------|------|------------|-------------|
| Collector-Base Voltage         | $V_{CBO}$ | V    |            | 40          |
| Collector-Emitter Voltage      | $V_{CEO}$ | V    |            | 25          |
| Emitter-Base Voltage           | $V_{EBO}$ | V    |            | 5           |
| Collector Current              | $I_C$     | mA   |            | 500         |
| Collector Power Dissipation    | $P_C$     | mW   |            | 300         |
| Operation Junction Temperature | $T_j$     | °C   |            | -55 to +150 |
| Storage Temperature            | $T_{stg}$ | °C   |            | -55 to +150 |

### ■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item                                 | Symbol        | Unit | Conditions                     | Min | Typ | Max |
|--------------------------------------|---------------|------|--------------------------------|-----|-----|-----|
| Collector-base breakdown voltage     | $V_{CBO}$     | V    | $I_C=100\mu A, I_E=0$          | 40  |     |     |
| Collector-emitter breakdown voltage  | $V_{CEO}$     | V    | $I_C=100\mu A, I_B=0$          | 25  |     |     |
| Emitter-base breakdown voltage       | $V_{EBO}$     | V    | $I_E=100\mu A, I_C=0$          | 5   |     |     |
| Collector-Emitter cut-off current    | $I_{CEX}$     | nA   | $V_{CE}=20V, V_{BE}=3V$        |     |     | 100 |
| Collector-base cut-off current       | $I_{CBO}$     | nA   | $V_{CB}=40V, I_E=0$            |     |     | 100 |
| Emitter-base cut-off current         | $I_{EBO}$     | nA   | $V_{EB}=5V, I_C=0$             |     |     | 100 |
| DC current gain                      | $h_{FE(1)}$   |      | $V_{CE}=1V, I_C=50mA$          | 120 |     | 350 |
|                                      | $h_{FE(2)}$   |      | $V_{CE}=1V, I_C=500mA$         | 50  |     |     |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V    | $I_C=500mA, I_B=50mA$          |     |     | 0.6 |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | V    | $I_C=500mA, I_B=50mA$          |     |     | 1.2 |
| Transition frequency                 | $f_T$         | MHz  | $V_{CE}=6V, I_C=20mA, f=30MHz$ | 150 |     |     |



# S8050-L THRU S8050-H

RoHS  
COMPLIANT

## ■ Classification Of HFE

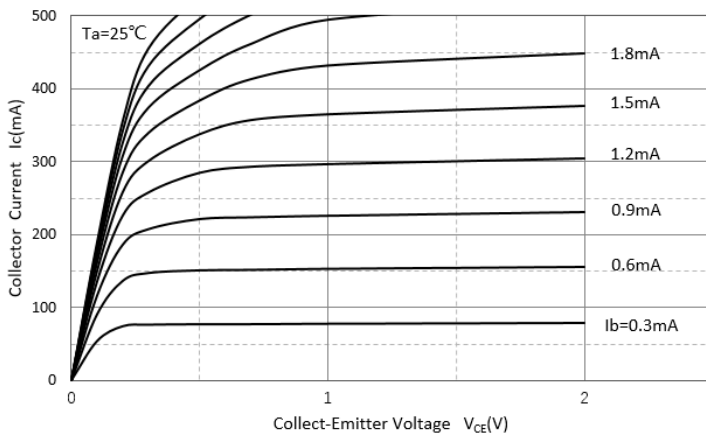
| Rank  | L       | H       |
|-------|---------|---------|
| Range | 120-200 | 200-350 |

## ■ Ordering Information (Example)

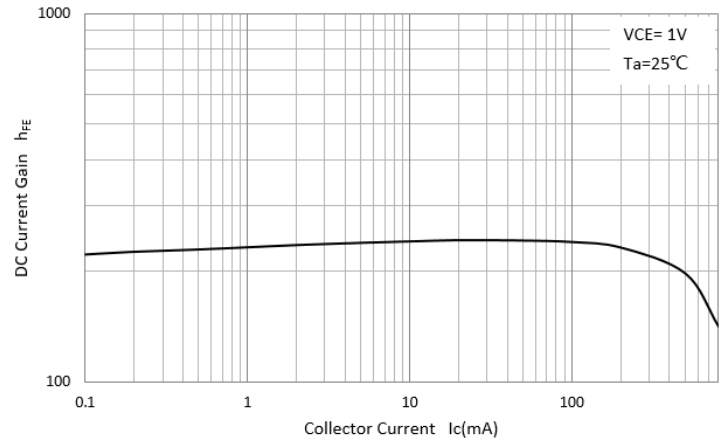
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| S8050         | F2           | Approximate 0.008 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics (Typical)

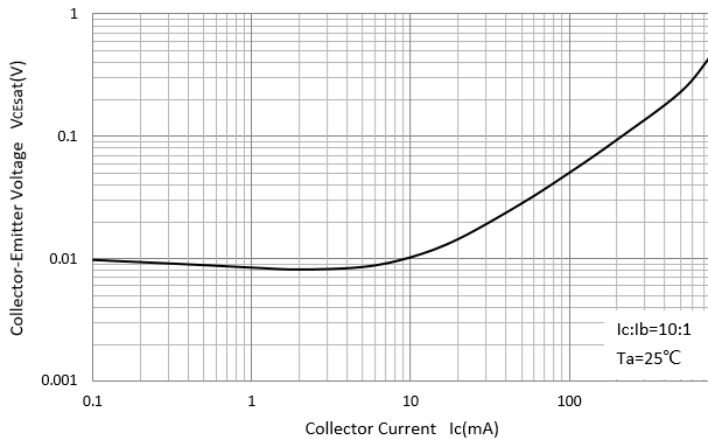
Static Characteristic



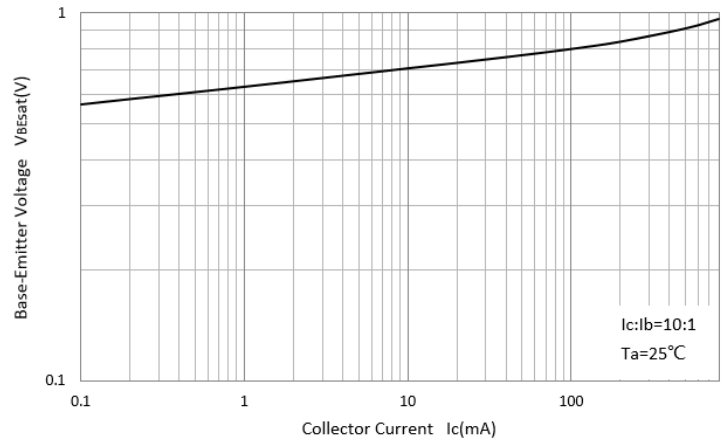
DC Current Gain



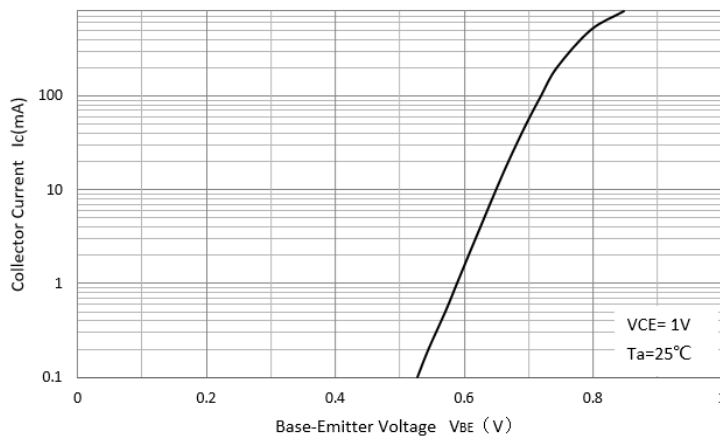
Collector-Emittor Saturation Voltage



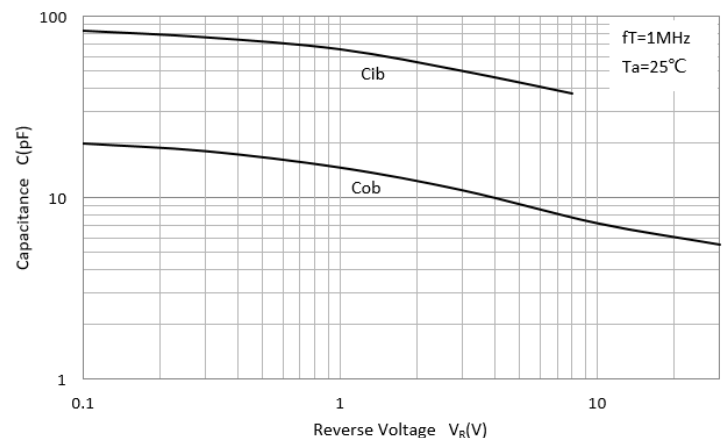
Base-Emittor Saturation Voltage



Base-Emittor On Voltage



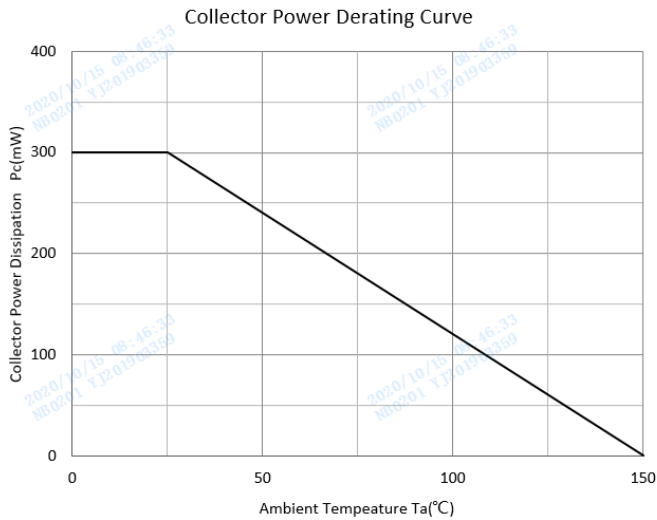
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



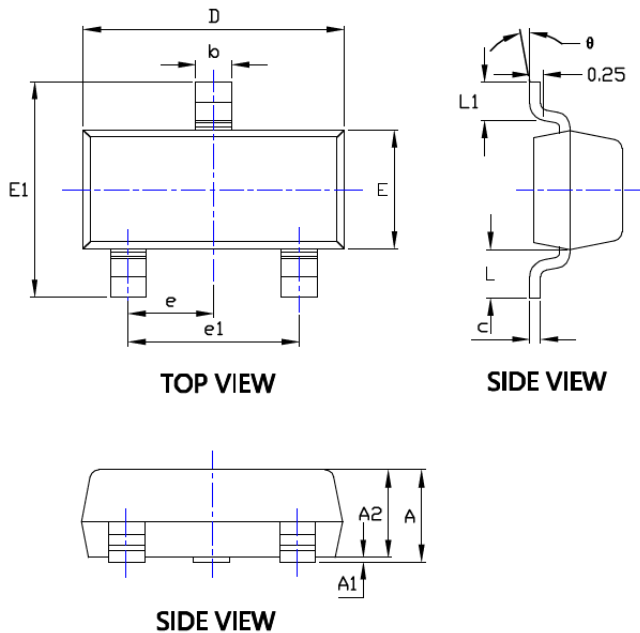


## S8050-L THRU S8050-H

RoHS  
COMPLIANT

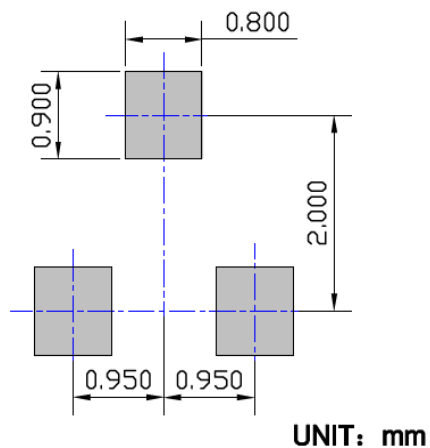


### ■SOT-23 Package Outline Dimensions



| SYMBOL | DIMENSIONS |       |            |       |
|--------|------------|-------|------------|-------|
|        | INCHES     |       | Millimeter |       |
|        | MIN.       | MAX.  | MIN.       | MAX.  |
| A      | 0.035      | 0.045 | 0.900      | 1.150 |
| A1     | 0.000      | 0.004 | 0.000      | 0.100 |
| A2     | 0.035      | 0.041 | 0.900      | 1.050 |
| b      | 0.012      | 0.020 | 0.300      | 0.500 |
| c      | 0.004      | 0.008 | 0.100      | 0.200 |
| D      | 0.110      | 0.118 | 2.800      | 3.000 |
| E      | 0.047      | 0.055 | 1.200      | 1.400 |
| E1     | 0.089      | 0.100 | 2.250      | 2.550 |
| e      | 0.037TYP   |       | 0.950TYP   |       |
| e1     | 0.071      | 0.079 | 1.800      | 2.000 |
| L      | 0.022REF   |       | 0.550REF   |       |
| L1     | 0.012      | 0.020 | 0.300      | 0.500 |
| θ      | 0°         | 8°    | 0°         | 8°    |

### ■SOT-23 Soldering Footprint





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