



**THE DATASHEET OF  
S8050-C-BP**





**S8050-B**  
**S8050-C**  
**S8050-D**

**NPN Silicon Transistors**

**Features**

- TO-92 Plastic-Encapsulate Transistors
- Capable of 0.625Watts( $T_{amb}=25^{\circ}C$ ) of Power Dissipation.
- Collector-current 0.5A
- Collector-base Voltage 40V
- Operating and storage junction temperature range:  $-55^{\circ}C$  to  $+150^{\circ}C$
- Marking : S8050
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Halogen free available upon request by adding suffix "-HF"

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| Symbol | Parameter | Min | Max | Units |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

**OFF CHARACTERISTICS**

|               |   |     |     |              |
|---------------|---|-----|-----|--------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage<br>( $I_C=100\mu A_{dc}$ , $I_E=0$ ) | 40  | --- | Vdc          |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage<br>( $I_C=0.1mA_{dc}$ , $I_B=0$ ) | 25  | --- | Vdc          |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage<br>( $I_E=100\mu A_{dc}$ , $I_C=0$ )   | 5.0 | --- | Vdc          |
| $I_{CBO}$     | Collector Cutoff Current<br>( $V_{CB}=40V_{dc}$ , $I_E=0$ )           | --- | 0.1 | $\mu A_{dc}$ |
| $I_{CEO}$     | Collector Cutoff Current<br>( $V_{CE}=20V_{dc}$ , $I_B=0$ )           | --- | 0.1 | $\mu A_{dc}$ |
| $I_{EBO}$     | Emitter Cutoff Current<br>( $V_{EB}=3.0V_{dc}$ , $I_C=0$ )            | --- | 0.1 | $\mu A_{dc}$ |

**ON CHARACTERISTICS**

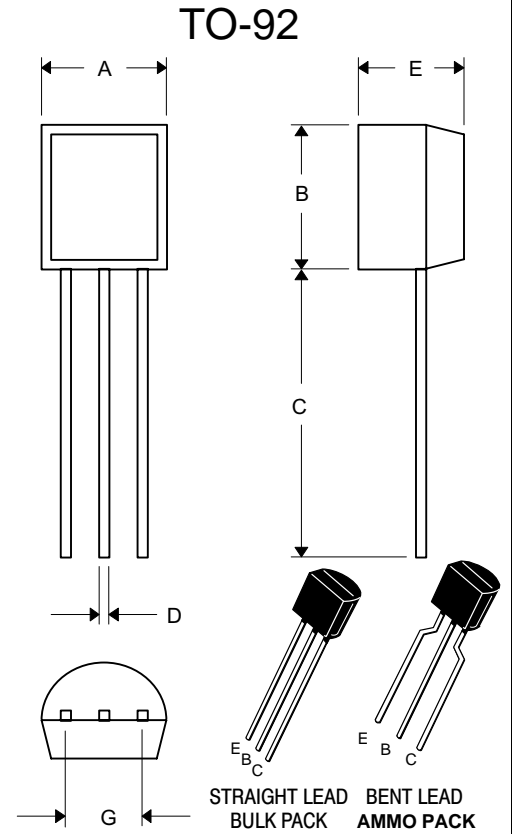
|               |  |     |     |     |
|---------------|--|-----|-----|-----|
| $h_{FE(1)}$   | DC Current Gain<br>( $I_C=50mA_{dc}$ , $V_{CE}=1.0V_{dc}$ )                    | 85  | 300 | --- |
| $h_{FE(2)}$   | DC Current Gain<br>( $I_C=500mA_{dc}$ , $V_{CE}=1.0V_{dc}$ )                   | 50  | --- | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=500mA_{dc}$ , $I_B=50mA_{dc}$ ) | --- | 0.6 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage<br>( $I_C=500mA_{dc}$ , $I_B=50mA_{dc}$ )      | --- | 1.2 | Vdc |
| $V_{EB}$      | Base- Emitter Voltage<br>( $I_E=100mA_{dc}$ )                                  | --- | 1.4 | Vdc |

**SMALL-SIGNAL CHARACTERISTICS**

|       |  |     |     |     |
|-------|--|-----|-----|-----|
| $f_T$ | Transistor Frequency<br>( $I_C=20mA_{dc}$ , $V_{CE}=6.0V_{dc}$ , $f=30MHz$ ) | 150 | --- | MHz |
|-------|--|-----|-----|-----|

**CLASSIFICATION OF  $h_{FE(1)}$**

| Rank  | B      | C       | D       |
|-------|--------|---------|---------|
| Range | 85-150 | 120-200 | 160-300 |



| DIM | INCHES |      | MM    |      | NOTE          |
|-----|--------|------|-------|------|---------------|
|     | MIN    | MAX  | MIN   | MAX  |               |
| A   | .175   | .185 | 4.45  | 4.70 |               |
| B   | .175   | .185 | 4.45  | 4.70 |               |
| C   | .500   | ---  | 12.70 | ---  |               |
| D   | .016   | .020 | 0.41  | 0.63 |               |
| E   | .135   | .145 | 3.43  | 3.68 |               |
| G   | .095   | .105 | 2.42  | 2.67 | Straight Lead |
|     | .173   | .220 | 4.40  | 5.60 | Bent Lead     |

\* For ammo packing detailed specification, click here to visit our website of product packaging for details.



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### Ordering Information :

| Device         | Packing                     |
|----------------|-----------------------------|
| Part Number-AP | Ammo Packing: 20Kpcs/Carton |
| Part Number-BP | Bulk: 100Kpcs/Carton        |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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