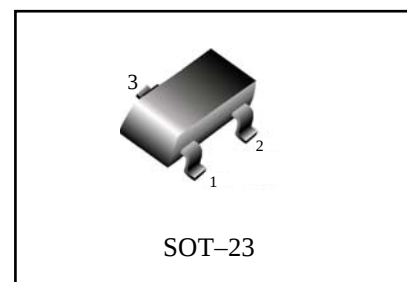


## General Purpose Transistors

### PNP Silicon

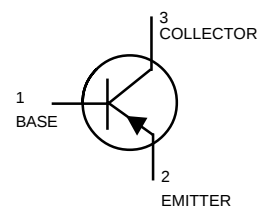
#### FEATURE

- Collector current capability  $I_C = -800$  mA.
- Collector-emitter voltage  $V_{CEO(max)} = -45$  V.
- General purpose switching and amplification.
- NPN complement : BC817 Series.



#### DEVICE MARKING AND ORDERING INFORMATION

| Device   | Marking | Shipping       |
|----------|---------|----------------|
| BC807S-A | 5A1     | 3000/Tape&Reel |
| BC807S-B | H5B     | 3000/Tape&Reel |
| BC807S-C | 5C1     | 3000/Tape&Reel |



#### MAXIMUM RATINGS

| Rating                    | Symbol    | Value | Unit |
|---------------------------|-----------|-------|------|
| Collector-Emitter Voltage | $V_{CEO}$ | -45   | V    |
| Collector-Base Voltage    | $V_{CBO}$ | -50   | V    |
| Emitter-Base Voltage      | $V_{EB0}$ | -5.0  | V    |
| Collector Current         | $I_C$     | -800  | mAdc |

#### THERMAL CHARACTERISTICS

| Characteristic                                                                                                 | Symbol          | Max         | Unit                       |
|----------------------------------------------------------------------------------------------------------------|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board, (1)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$        | $P_D$           | 225<br>1.8  | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction to Ambient                                                                        | $R_{\theta JA}$ | 556         | $^\circ\text{C/W}$         |
| Total Device Dissipation<br>Alumina Substrate, (2) $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 300<br>2.4  | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction to Ambient                                                                        | $R_{\theta JA}$ | 417         | $^\circ\text{C/W}$         |
| Junction and Storage Temperature                                                                               | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$           |

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.

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

### OFF CHARACTERISTICS

|                                                                                          |               |      |   |      |               |
|------------------------------------------------------------------------------------------|---------------|------|---|------|---------------|
| Collector–Emitter Breakdown Voltage<br>( $I_C = -10\text{ mA}$ )                         | $V_{(BR)CEO}$ | -45  | — | —    | V             |
| Collector–Emitter Breakdown Voltage<br>( $V_{EB} = 0$ , $I_C = -10\text{ }\mu\text{A}$ ) | $V_{(BR)CES}$ | -50  | — | —    | V             |
| Emitter–Base Breakdown Voltage<br>( $I_E = -1.0\text{ }\mu\text{A}$ )                    | $V_{(BR)EBO}$ | -5.0 | — | —    | V             |
| Collector Cutoff Current<br>( $V_{CB} = -20\text{ V}$ )                                  | $I_{CBO}$     | —    | — | -100 | nA            |
| ( $V_{CB} = -20\text{ V}$ , $T_J = 150^\circ\text{C}$ )                                  |               | —    | — | -5.0 | $\mu\text{A}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

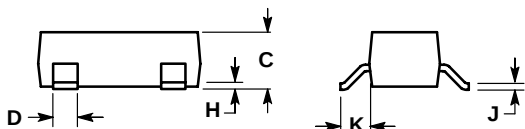
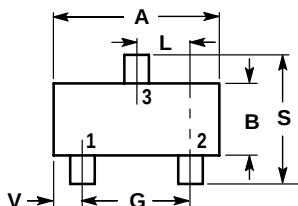
### ON CHARACTERISTICS

|                                                                                            |               |     |   |      |   |
|--------------------------------------------------------------------------------------------|---------------|-----|---|------|---|
| DC Current Gain<br>( $I_C = -100\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )                   | $h_{FE}$      | 100 | — | 250  | — |
| BC807–A                                                                                    |               | 160 | — | 400  |   |
| BC807–B                                                                                    |               | 250 | — | 600  |   |
| BC807–C                                                                                    |               | 40  | — | —    |   |
| ( $I_C = -500\text{ mA}$ , $V_{CE} = -1.0\text{ V}$ )                                      |               |     |   |      |   |
| Collector–Emitter Saturation Voltage<br>( $I_C = -500\text{ mA}$ , $I_B = -50\text{ mA}$ ) | $V_{CE(sat)}$ | —   | — | -0.7 | V |
| Base–Emitter On Voltage<br>( $I_C = -500\text{ mA}$ , $I_B = -1.0\text{ V}$ )              | $V_{BE(on)}$  | —   | — | -1.2 | V |

### SMALL–SIGNAL CHARACTERISTICS

|                                                                                                                      |           |     |    |   |     |
|----------------------------------------------------------------------------------------------------------------------|-----------|-----|----|---|-----|
| Current–Gain — Bandwidth Product<br>( $I_C = -10\text{ mA}$ , $V_{CE} = -5.0\text{ V}_{dc}$ , $f = 100\text{ MHz}$ ) | $f_T$     | 100 | —  | — | MHz |
| Output Capacitance<br>( $V_{CB} = -10\text{ V}$ , $f = 1.0\text{ MHz}$ )                                             | $C_{obo}$ | —   | 10 | — | pF  |

## SOT-23



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES |        | MILLIMETERS |       |
|-----|--------|--------|-------------|-------|
|     | MIN    | MAX    | MIN         | MAX   |
| A   | 0.1102 | 0.1197 | 2.80        | 3.04  |
| B   | 0.0472 | 0.0551 | 1.20        | 1.40  |
| C   | 0.0350 | 0.0440 | 0.89        | 1.11  |
| D   | 0.0150 | 0.0200 | 0.37        | 0.50  |
| G   | 0.0701 | 0.0807 | 1.78        | 2.04  |
| H   | 0.0005 | 0.0040 | 0.013       | 0.100 |
| J   | 0.0034 | 0.0070 | 0.085       | 0.177 |
| K   | 0.0140 | 0.0285 | 0.35        | 0.69  |
| L   | 0.0350 | 0.0401 | 0.89        | 1.02  |
| S   | 0.0830 | 0.1039 | 2.10        | 2.64  |
| V   | 0.0177 | 0.0236 | 0.45        | 0.60  |

