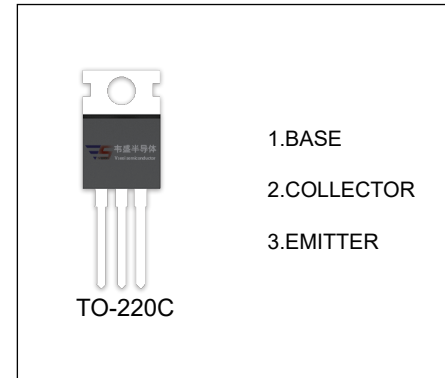


## 2SB857 TRANSISTOR (PNP)

### FEATURES

- Low Frequency Power Amplifier



### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

| Symbol          | Parameter  | Value    | Unit                      |
|-----------------|--|----------|---------------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | -70      | V                         |
| $V_{CEO}$       | Collector-Emitter Voltage                        | -50      | V                         |
| $V_{EBO}$       | Emitter-Base Voltage                             | -5       | V                         |
| $I_C$           | Collector Current                                | -4       | A                         |
| $P_C$           | Collector Power Dissipation                      | 2        | W                         |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 62.5     | $^\circ\text{C}/\text{W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^\circ\text{C}$          |

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

| Parameter                            | Symbol          | Test conditions                        | Min | Typ | Max | Unit          |
|--------------------------------------|-----------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$   | $I_C=-10\mu\text{A}, I_E=0$            | -70 |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}^*$ | $I_C=-50\text{mA}, I_B=0$              | -50 |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$   | $I_E=-10\mu\text{A}, I_C=0$            | -5  |     |     | V             |
| Collector cut-off current            | $I_{CBO}$       | $V_{CB}=-50\text{V}, I_E=0$            |     |     | -1  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$       | $V_{EB}=-5\text{V}, I_C=0$             |     |     | -1  | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}^*$   | $V_{CE}=-4\text{V}, I_C=-1\text{A}$    | 60  |     | 320 |               |
|                                      | $h_{FE(2)}^*$   | $V_{CE}=-4\text{V}, I_C=-0.1\text{A}$  | 35  |     |     |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}^*$ | $I_C=-2\text{A}, I_B=-200\text{mA}$    |     |     | -1  | V             |
| Base-emitter voltage                 | $V_{BE}$        | $V_{CE}=-4\text{V}, I_C=-1\text{A}$    |     |     | -1  | V             |
| Transition frequency                 | $f_T^*$         | $V_{CE}=-4\text{V}, I_C=-500\text{mA}$ |     | 15  |     | MHz           |

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

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

| RANK  | B      | C       | D       |
|-------|--------|---------|---------|
| RANGE | 60-120 | 100-200 | 160-320 |