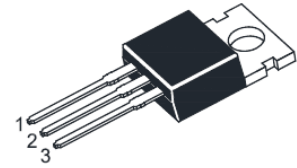


## 2SB596

### PNP Epitaxial Silicon Power Transistor

for power amplifier applications



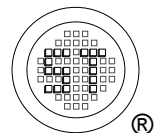
1.Base 2.Collector 3.Emitter  
TO-220FB Plastic Package

#### Absolute Maximum Ratings ( $T_a = 25\text{ }^{\circ}\text{C}$ )

| Parameter                                                | Symbol     | Value         | Unit               |
|----------------------------------------------------------|------------|---------------|--------------------|
| Collector Base Voltage                                   | $-V_{CBO}$ | 80            | V                  |
| Collector Emitter Voltage                                | $-V_{CEO}$ | 80            | V                  |
| Emitter Base Voltage                                     | $-V_{EBO}$ | 5             | V                  |
| Collector Current                                        | $-I_C$     | 4             | A                  |
| Base Current                                             | $-I_B$     | 0.4           | A                  |
| Power Dissipation ( $T_c = 25\text{ }^{\circ}\text{C}$ ) | $P_C$      | 30            | W                  |
| Junction Temperature                                     | $T_j$      | 150           | $^{\circ}\text{C}$ |
| Storage Temperature Range                                | $T_{stg}$  | - 55 to + 150 | $^{\circ}\text{C}$ |

#### Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$

| Parameter                                                                                                                                                   | Symbol         | Min. | Typ. | Max. | Unit          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|------|------|---------------|
| DC Current Gain<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 0.5\text{ A}$<br><br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 3\text{ A}$<br><br>Current Gain Group R O Y | $h_{FE}$       | 40   | -    | 80   | -             |
|                                                                                                                                                             | $h_{FE}$       | 70   | -    | 140  | -             |
|                                                                                                                                                             | $h_{FE}$       | 120  | -    | 240  | -             |
|                                                                                                                                                             | $h_{FE}$       | 15   | -    | -    | -             |
|                                                                                                                                                             | $h_{FE}$       | 15   | -    | -    | -             |
| Collector Base Cutoff Current<br>at $-V_{CB} = 80\text{ V}$                                                                                                 | $-I_{CBO}$     | -    | -    | 70   | $\mu\text{A}$ |
| Emitter Base Cutoff Current<br>at $-V_{EB} = 5\text{ V}$                                                                                                    | $-I_{EBO}$     | -    | -    | 100  | $\mu\text{A}$ |
| Collector Emitter Breakdown Voltage<br>at $-I_C = 50\text{ mA}$                                                                                             | $-V_{(BR)CEO}$ | 80   | -    | -    | V             |
| Emitter Base Breakdown Voltage<br>at $-I_E = 10\text{ mA}$                                                                                                  | $-V_{(BR)EBO}$ | 5    | -    | -    | V             |
| Collector Emitter Saturation Voltage<br>at $-I_C = 3\text{ A}$ , $-I_B = 300\text{ mA}$                                                                     | $-V_{CE(sat)}$ | -    | -    | 1.7  | V             |
| Base Emitter On Voltage<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 3\text{ A}$                                                                                  | $-V_{BE(on)}$  | -    | -    | 1.5  | V             |
| Transition Frequency<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 0.5\text{ A}$                                                                                   | $f_T$          | 3    | -    | -    | MHz           |
| Collector Output Capacitance<br>at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$                                                                             | $C_{ob}$       | -    | 130  | -    | pF            |



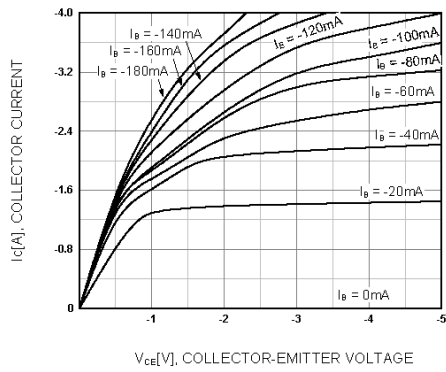


Figure 1. Static Characteristic

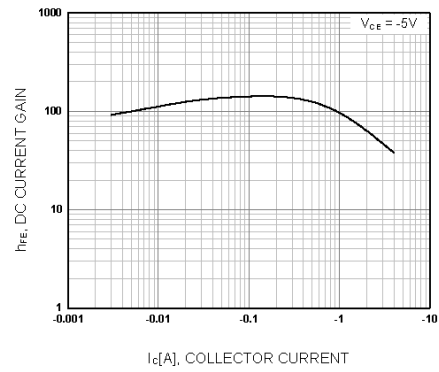


Figure 2. DC current Gain

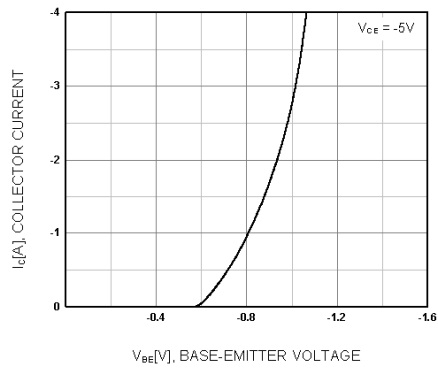


Figure 3. Base-Emitter Saturation Voltage

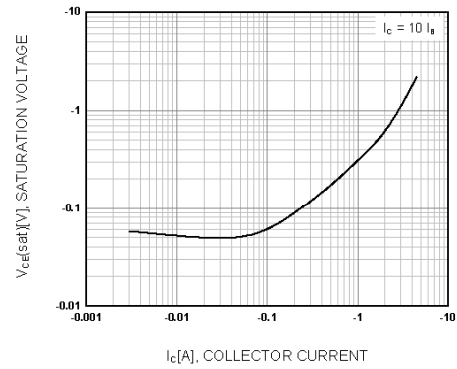


Figure 4. Collector-Emitter Saturation Voltage

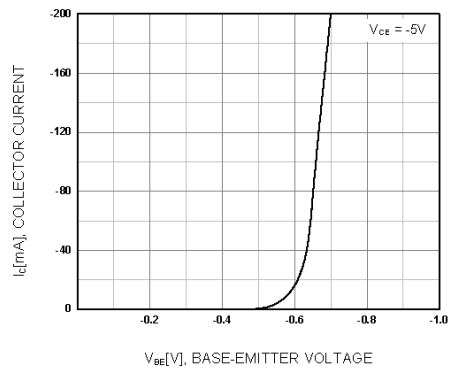


Figure 5. Base-Emitter On Voltage

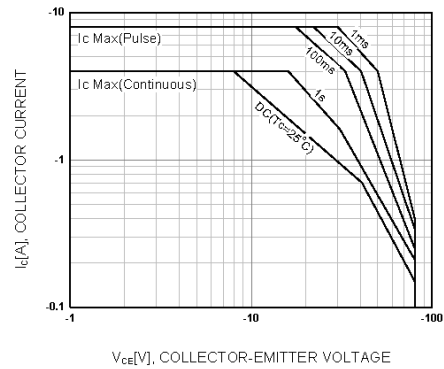
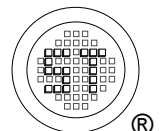


Figure 6. Safe Operating Area



Package Outline Dimensions (Units: mm)

TO-220FB

