

## BC327/328

### Switching and Amplifier Applications

- Suitable for AF-Driver stages and low power output stages
- Complement to BC337/BC338



### PNP Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter                 | Value     | Units            |
|-----------|---------------------------|-----------|------------------|
| $V_{CES}$ | Collector-Emitter Voltage |           |                  |
|           | : BC327                   | -50       | V                |
|           | : BC328                   | -30       | V                |
| $V_{CEO}$ | Collector-Emitter Voltage |           |                  |
|           | : BC327                   | -45       | V                |
|           | : BC328                   | -25       | V                |
| $V_{EBO}$ | Emitter-Base Voltage      | -5        | V                |
| $I_C$     | Collector Current (DC)    | -800      | mA               |
| $P_C$     | Collector Dissipation     | 625       | mW               |
| $T_J$     | Junction Temperature      | 150       | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature       | -55 ~ 150 | $^\circ\text{C}$ |

#### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol                 | Parameter                            | Test Condition  | Min. | Typ. | Max. | Units |
|------------------------|--------------------------------------|---|------|------|------|-------|
| $BV_{CEO}$             | Collector-Emitter Breakdown Voltage  | $I_C = -10\text{mA}, I_B = 0$                               |      |      |      |       |
|                        | : BC327                              |   | -45  |      |      | V     |
|                        | : BC328                              |   | -25  |      |      | V     |
| $BV_{CES}$             | Collector-Emitter Breakdown Voltage  | $I_C = -0.1\text{mA}, V_{BE} = 0$                           |      |      |      |       |
|                        | : BC327                              |   | -50  |      |      | V     |
|                        | : BC328                              |   | -30  |      |      | V     |
| $BV_{EBO}$             | Emitter-Base Breakdown Voltage       | $I_E = -10\mu\text{A}, I_C = 0$                             | -5   |      |      | V     |
| $I_{CES}$              | Collector Cut-off Current            |   |      |      |      |       |
|                        | : BC307                              | $V_{CE} = -45\text{V}, V_{BE} = 0$                          |      | -2   | -100 | nA    |
|                        | : BC338                              | $V_{CE} = -25\text{V}, V_{BE} = 0$                          |      | -2   | -100 | nA    |
| $h_{FE1}$<br>$h_{FE2}$ | DC Current Gain                      |   |      |      |      |       |
|                        |                                      | $V_{CE} = -1\text{V}, I_C = -100\text{mA}$                  | 100  |      | 630  |       |
|                        |                                      | $V_{CE} = -1\text{V}, I_C = -300\text{mA}$                  | 40   |      |      |       |
| $V_{CE}(\text{sat})$   | Collector-Emitter Saturation Voltage | $I_C = -500\text{mA}, I_B = -50\text{mA}$                   |      |      | -0.7 | V     |
| $V_{BE}(\text{on})$    | Base-Emitter On Voltage              | $V_{CE} = -1\text{V}, I_C = -300\text{mA}$                  |      |      | -1.2 | V     |
| $f_T$                  | Current Gain Bandwidth Product       | $V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 20\text{MHz}$ |      | 100  |      | MHz   |
| $C_{ob}$               | Output Capacitance                   | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$            |      | 12   |      | pF    |

#### $h_{FE}$ Classification

| Classification | 16        | 25        | 40        |
|----------------|-----------|-----------|-----------|
| $h_{FE1}$      | 100 ~ 250 | 160 ~ 400 | 250 ~ 630 |
| $h_{FE2}$      | 60-       | 100-      | 170-      |

# Typical Characteristics

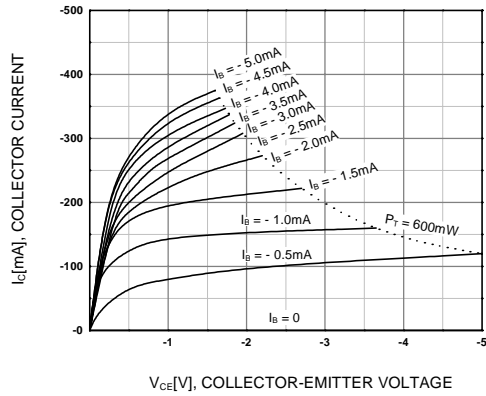


Figure 1. Static Characteristic

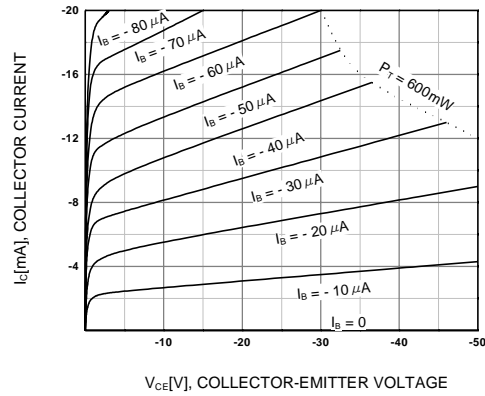


Figure 2. Static Characteristic

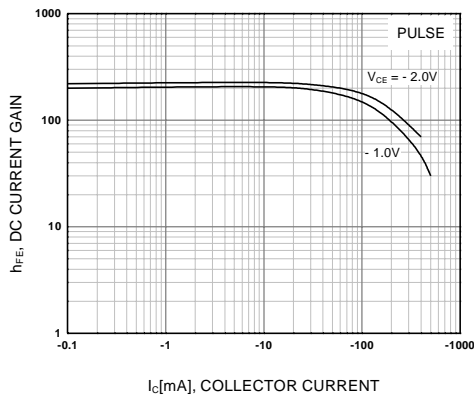


Figure 3. DC current Gain

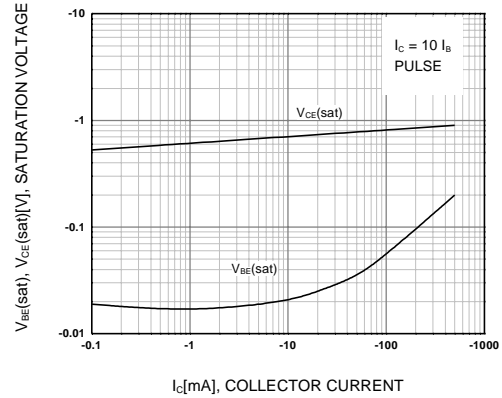


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

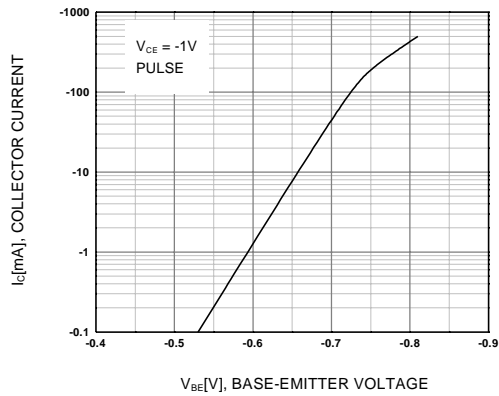


Figure 5. Base-Emitter On Voltage

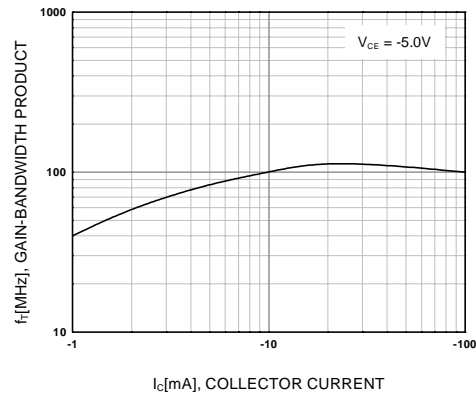


Figure 6. Gain Bandwidth Product

Typical Characteristics (Continued)



Figure 7. Input and Output Capacitance vs. Reverse Voltage

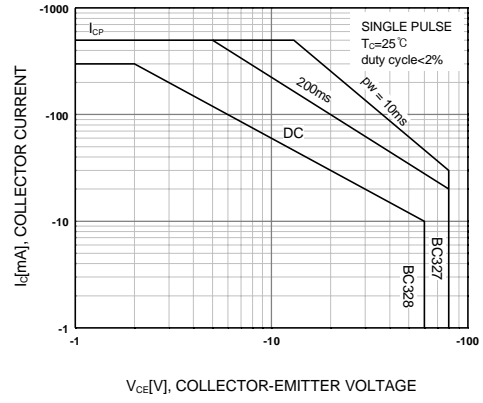


Figure 8. Safe Operating Area



Figure 9. Power Derating

# Package Dimensions

## TO-92



Dimensions in Millimeters

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| CoolFET™             | MICROWIRE™    | TinyLogic™  |
| CROSSVOLT™           | POP™          | UHC™        |
| E <sup>2</sup> CMOS™ | PowerTrench®  | VCX™        |
| FACT™                | QFET™         |             |
| FACT Quiet Series™   | QS™           |             |
| FAST®                | Quiet Series™ |             |
| FASTr™               | SuperSOT™-3   |             |
| GTO™                 | SuperSOT™-6   |             |

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