

# PNP Epitaxial Silicon Transistor

## BC327

### Features

- Switching and Amplifier Applications
- Suitable for AF-Driver Stages and Low-Power Output Stages
- Complement to BC337/BC338
- These are Pb-Free Devices

### ABSOLUTE MAXIMUM RATINGS

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

| Symbol    | Parameter                 | Value       | Unit             |
|-----------|---------------------------|-------------|------------------|
| $V_{CES}$ | Collector-Emitter Voltage | -50         | V                |
| $V_{CEO}$ | Collector-Emitter Voltage | -45         | V                |
| $V_{EBO}$ | Emitter-Base Voltage      | -5          | V                |
| $I_C$     | Collector Current (DC)    | -800        | mA               |
| $T_J$     | Junction Temperature      | 150         | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature       | -55 to +150 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

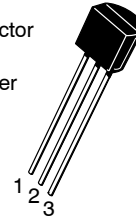
### THERMAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise noted.) (Note 1)

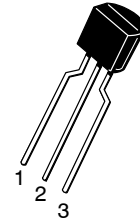
| Symbol          | Characteristic                                       | Value      | Unit                       |
|-----------------|------------------------------------------------------|------------|----------------------------|
| $P_D$           | Power Dissipation<br>Derate Above $25^\circ\text{C}$ | 625<br>5.0 | mW<br>mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance,<br>Junction to Ambient           | 200        | $^\circ\text{C}/\text{W}$  |

1. PCB size: FR-4, 76 mm  $\times$  114 mm  $\times$  1.57 mm (3.0 inch  $\times$  4.5 inch  $\times$  0.062 inch) with minimum land pattern size.

1. Collector
2. Base
3. Emitter

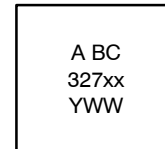


TO-92 3  
CASE 135AN



TO-92 3 LF  
CASE 135AR

### MARKING DIAGRAM



- A = Assembly Location  
BC327xx = Specific Device Code  
xx = 25, 40  
Y = Year  
W = Work Week

### ORDERING INFORMATION

| Device    | Package                 | Shipping                |
|-----------|-------------------------|-------------------------|
| BC327BU   | TO-92 3<br>(Pb-Free)    | 10,000 Units /<br>BLKBG |
| BC32740BU | TO-92 3<br>(Pb-Free)    | 10,000 Units /<br>BLKBG |
| BC32725BU | TO-92 3<br>(Pb-Free)    | 10,000 Units /<br>BLKBG |
| BC32725TA | TO-92 3 LF<br>(Pb-Free) | 2,000 Units /<br>FNFLD  |
| BC32740TA | TO-92 3 LF<br>(Pb-Free) | 2,000 Units /<br>FNFLD  |

# BC327

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted.)

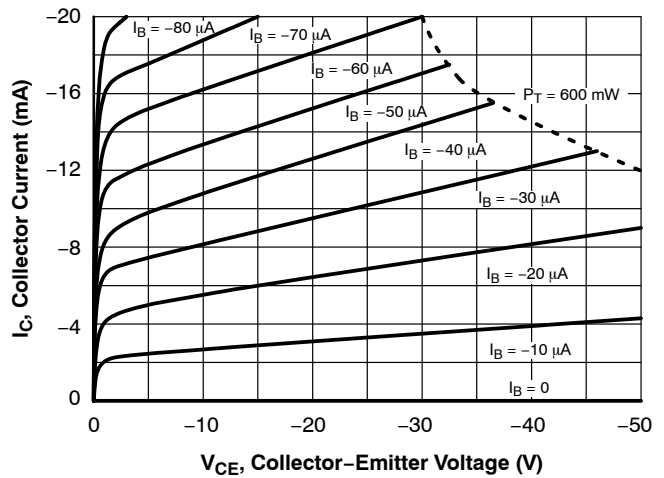
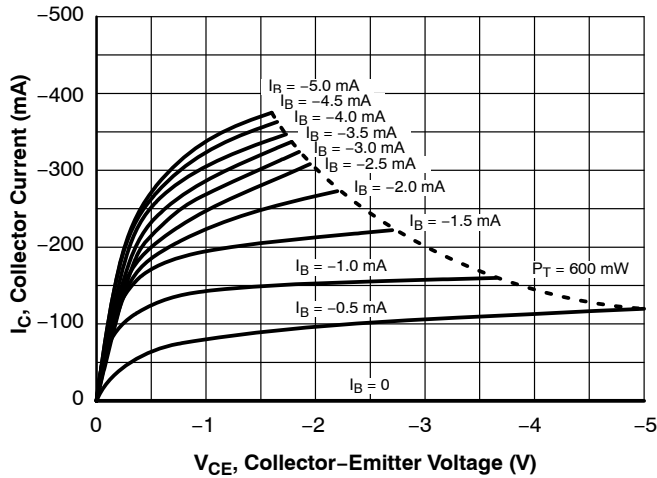
| Symbol               | Parameter                            | Conditions                                                  | Min | Typ | Max  | Unit |
|----------------------|--------------------------------------|-------------------------------------------------------------|-----|-----|------|------|
| BV <sub>CEO</sub>    | Collector-Emitter Breakdown Voltage  | I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0                 | -45 | -   | -    | V    |
| BV <sub>CES</sub>    | Collector-Emitter Breakdown Voltage  | I <sub>C</sub> = -0.1 mA, V <sub>BE</sub> = 0               | -50 | -   | -    | V    |
| BV <sub>EBO</sub>    | Emitter-Base Breakdown Voltage       | I <sub>E</sub> = -10 μA, I <sub>C</sub> = 0                 | -5  | -   | -    | V    |
| I <sub>CES</sub>     | Collector Cut-Off Current            | V <sub>CE</sub> = -45 V, I <sub>B</sub> = 0                 | -   | -2  | -100 | nA   |
| h <sub>FE1</sub>     | DC Current Gain                      | V <sub>CE</sub> = -1 V, I <sub>C</sub> = -100 mA            | 100 | -   | 630  |      |
| h <sub>FE2</sub>     |                                      | V <sub>CE</sub> = -1 V, I <sub>C</sub> = -300 mA            | 60  | -   | -    |      |
| V <sub>CE(sat)</sub> | Collector-Emitter Saturation Voltage | I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA           | -   | -   | -0.7 | V    |
| V <sub>BE(on)</sub>  | Base-Emitter On Voltage              | V <sub>CE</sub> = -1 V, I <sub>C</sub> = -300 mA            | -   | -   | -1.2 | V    |
| f <sub>T</sub>       | Current Gain Bandwidth Product       | V <sub>CE</sub> = -5 V, I <sub>C</sub> = -10 mA, f = 20 MHz | -   | 100 | -    | MHz  |
| C <sub>ob</sub>      | Output Capacitance                   | V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz      | -   | 12  | -    | pF   |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

### h<sub>FE</sub> Classification

| Classification   | 16        | 25        | 40        |
|------------------|-----------|-----------|-----------|
| h <sub>FE1</sub> | 100 ~ 250 | 160 ~ 400 | 250 ~ 630 |
| h <sub>FE2</sub> | 60 ~      | 100 ~     | 170 ~     |

## TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Continued)

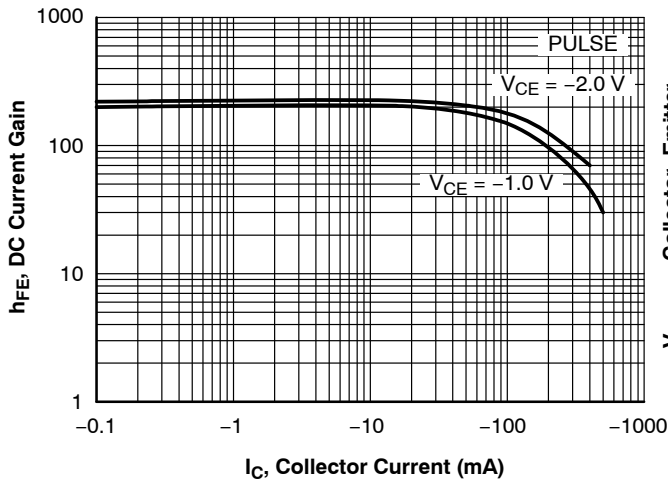


Figure 3. DC Current Gain

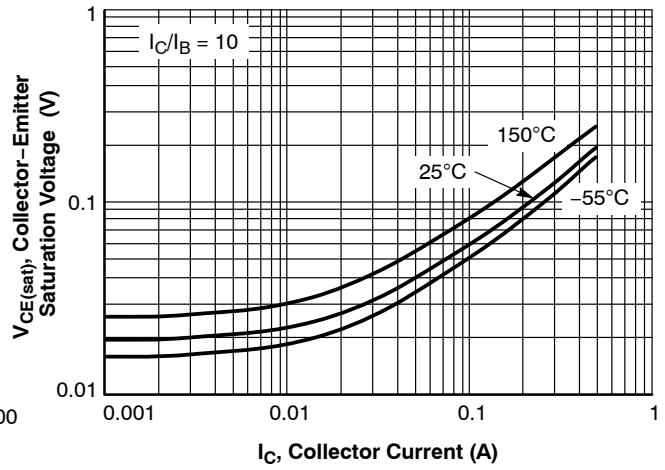


Figure 4. Collector-Emitter Saturation Voltage vs. Collector Current

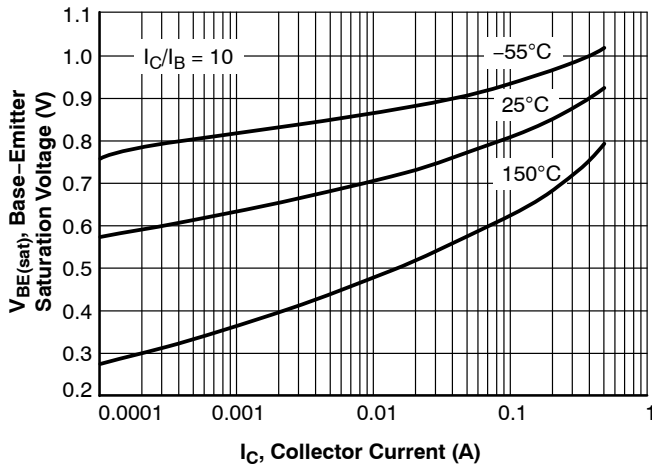


Figure 5. Base-Emitter Saturation Voltage vs. Collector Current

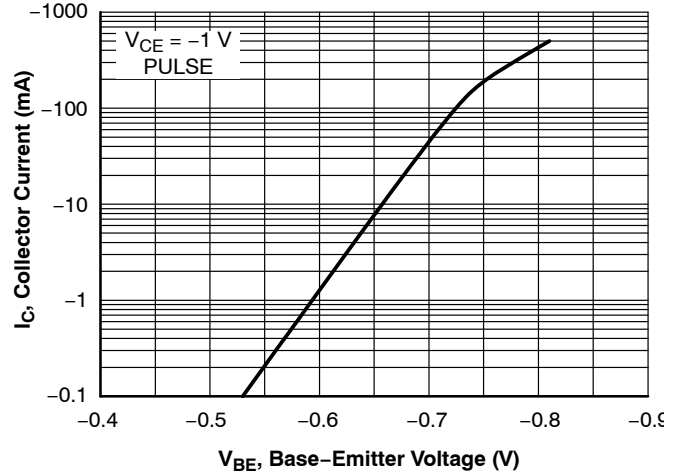


Figure 6. Base-Emitter On Voltage

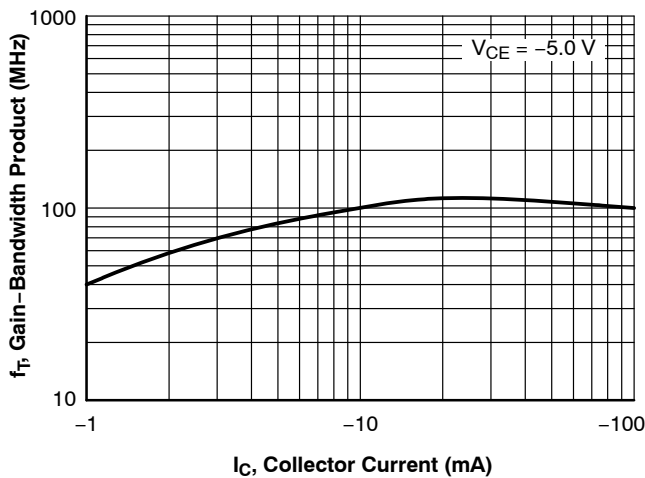
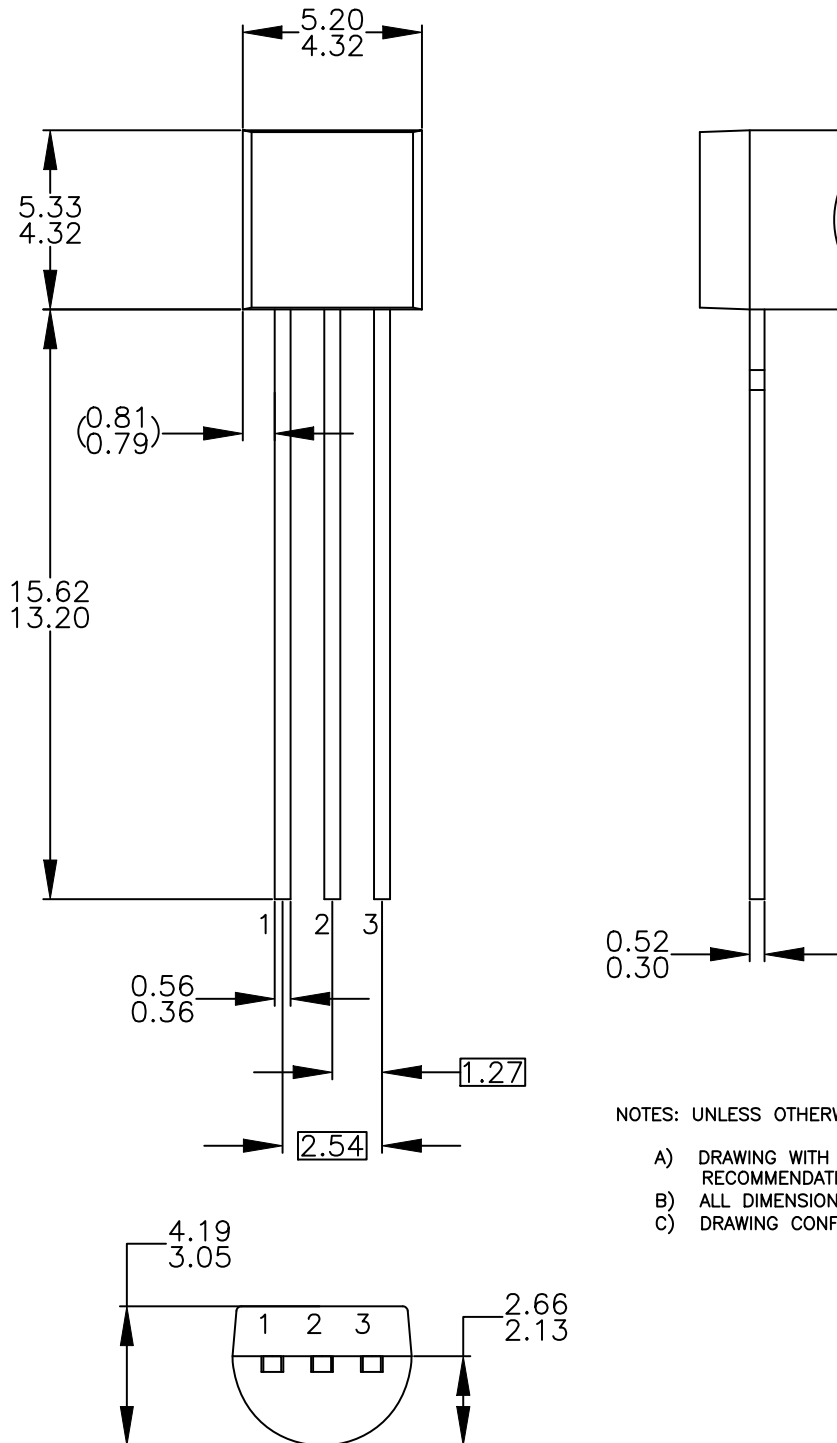


Figure 7. Gain Bandwidth Product

**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

TO-92 3 4.825x4.76  
CASE 135AN  
ISSUE O

DATE 31 JUL 2016



NOTES: UNLESS OTHERWISE SPECIFIED

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**TO-92 3 4.83x4.76 LEADFORMED**  
**CASE 135AR**  
**ISSUE O**

DATE 30 SEP 2016



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