

BC327, BC327-16, BC327-25, BC327-40

Amplifier Transistors

PNP Silicon

Features

- Pb-Free Packages are Available*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|----------------|-------------|----------------------------|
| Collector–Emitter Voltage | V_{CEO} | –45 | Vdc |
| Collector–Base Voltage | V_{CES} | –50 | Vdc |
| Collector–Emitter Voltage | V_{EBO} | –5.0 | Vdc |
| Collector Current – Continuous | I_C | –800 | mAdc |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$ | P_D | 625 5.0 | mW mW/ $^\circ\text{C}$ |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$ | P_D | 1.5 12 | W mW/ $^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | –55 to +150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

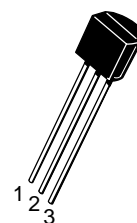
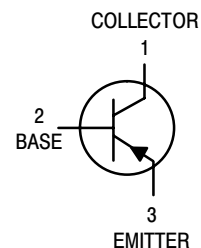
| Characteristic | Symbol | Max | Unit |
|---|-----------------|------|---------------------------|
| Thermal Resistance, Junction–to–Ambient | $R_{\theta JA}$ | 200 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction–to–Case | $R_{\theta JC}$ | 83.3 | $^\circ\text{C}/\text{W}$ |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.



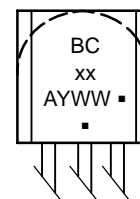
ON Semiconductor®

<http://onsemi.com>



TO-92
CASE 29
STYLE 17

MARKING DIAGRAM



BCxx = Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering, marking, and shipping information in the package dimensions section on page 4 of this data sheet.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|----------------------|------|-----|------|------|
| OFF CHARACTERISTICS | | | | | |
| Collector-Emitter Breakdown Voltage (I _C = -10 mA, I _B = 0) | V _{(BR)CEO} | -45 | - | - | Vdc |
| Collector-Emitter Breakdown Voltage (I _C = -100 μA, I _E = 0) | V _{(BR)CES} | -50 | - | - | Vdc |
| Emitter-Base Breakdown Voltage (I _E = -10 μA, I _C = 0) | V _{(BR)EBO} | -5.0 | - | - | Vdc |
| Collector Cutoff Current (V _{CB} = -30 V, I _E = 0) | I _{CBO} | - | - | -100 | nAdc |
| Collector Cutoff Current (V _{CE} = -45 V, V _{BE} = 0) | I _{CES} | - | - | -100 | nAdc |
| Emitter Cutoff Current (V _{EB} = -4.0 V, I _C = 0) | I _{EBO} | - | - | -100 | nAdc |
| ON CHARACTERISTICS | | | | | |
| DC Current Gain (I _C = -100 mA, V _{CE} = -1.0 V) | h _{FE} | 100 | - | 630 | - |
| | | 100 | - | 250 | |
| | | 160 | - | 400 | |
| | | 250 | - | 630 | |
| | | 40 | - | - | |
| Base-Emitter On Voltage (I _C = -300 mA, V _{CE} = -1.0 V) | V _{BE(on)} | - | - | -1.2 | Vdc |
| Collector-Emitter Saturation Voltage (I _C = -500 mA, I _B = -50 mA) | V _{CE(sat)} | - | - | -0.7 | Vdc |
| SMALL-SIGNAL CHARACTERISTICS | | | | | |
| Output Capacitance (V _{CB} = -10 V, I _E = 0, f = 1.0 MHz) | C _{ob} | - | 11 | - | pF |
| Current-Gain-Bandwidth Product (I _C = -10 mA, V _{CE} = -5.0 V, f = 100 MHz) | f _T | - | 260 | - | MHz |

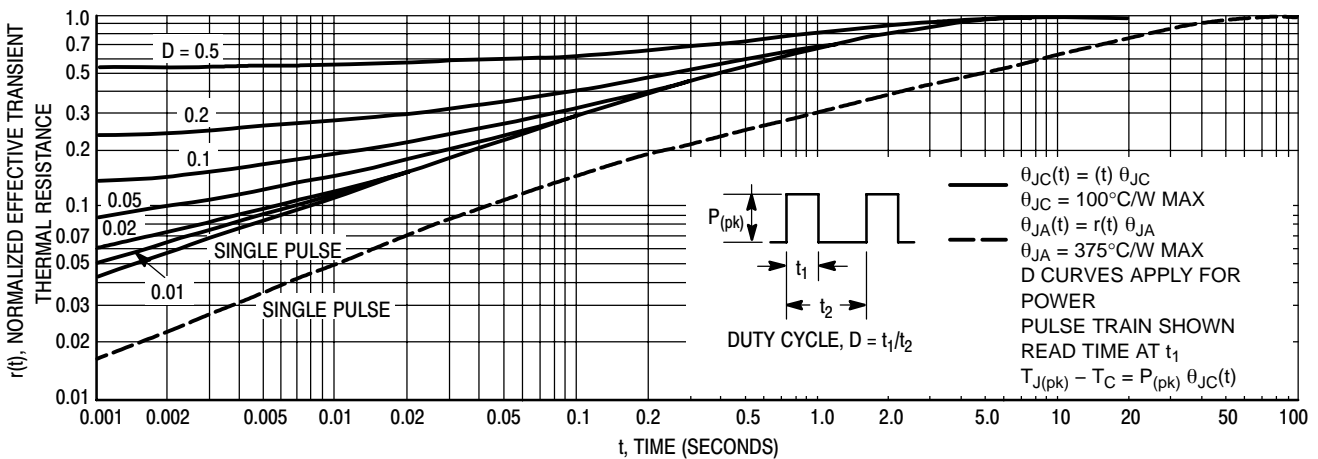


Figure 1. Thermal Response

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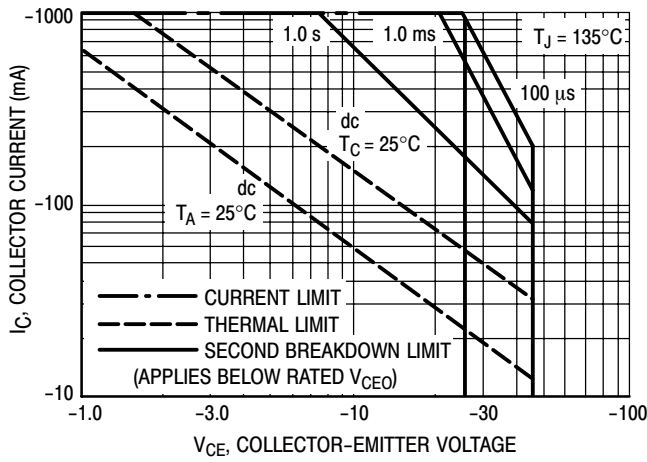


Figure 2. Active Region - Safe Operating Area

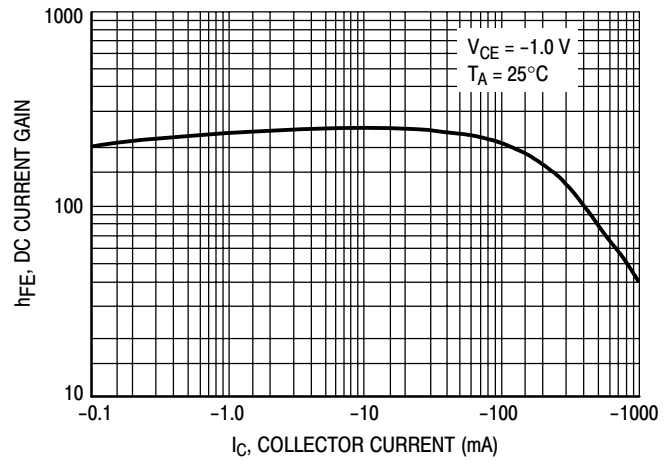


Figure 3. DC Current Gain

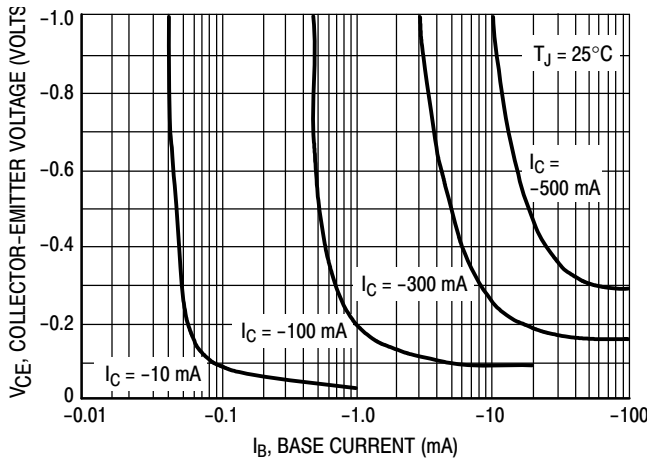


Figure 4. Saturation Region

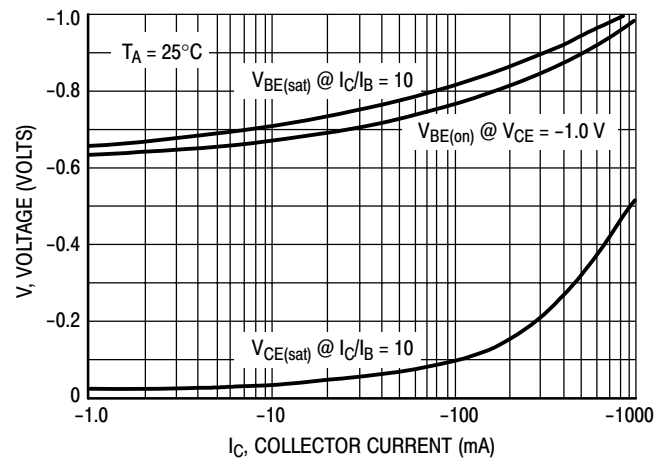


Figure 5. "On" Voltages

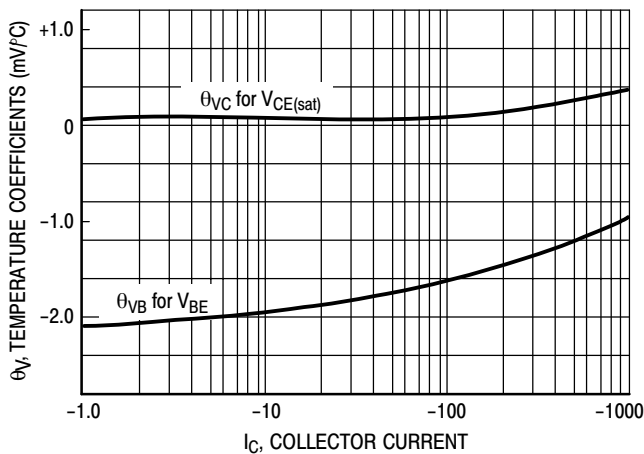


Figure 6. Temperature Coefficients

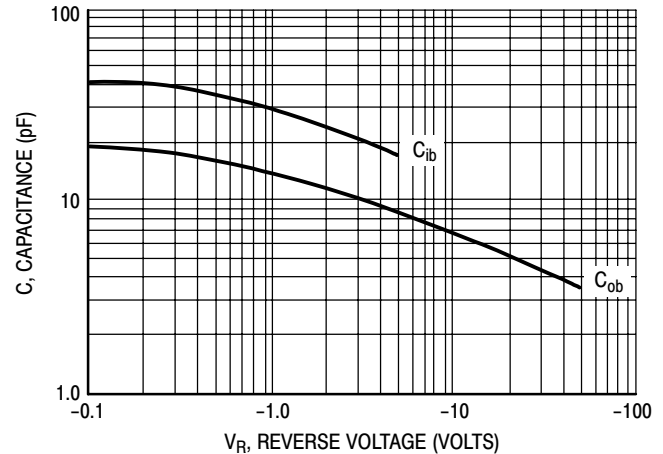


Figure 7. Capacitances

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ORDERING INFORMATION

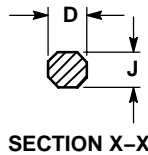
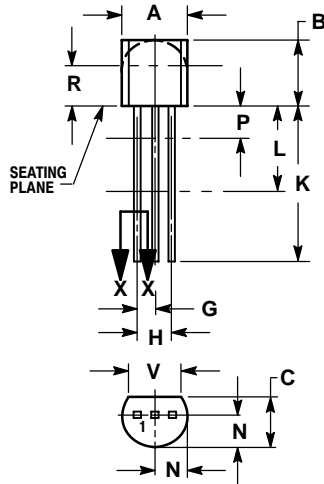
| Device Order Number | Specific Device Marking | Package Type | Shipping† |
|---------------------|-------------------------|--------------------|------------------------|
| BC327 | 7 | TO-92 | 5000 Units / Bulk |
| BC327G | 7 | TO-92 (Pb-Free) | 5000 Units / Bulk |
| BC327RL1 | 327 | TO-92 | 2000 / Tape & Reel |
| BC327RL1G | 327 | TO-92 (Pb-Free) | 2000 / Tape & Reel |
| BC327ZL1 | 327 | TO-92 | 2000 / Tape & Ammo Box |
| BC327ZL1G | 327 | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| BC327-016 | 327 | TO-92 | 5000 Units / Bulk |
| BC327-016G | 327 | TO-92 (Pb-Free) | 5000 Units / Bulk |
| BC327-016ZL1 | 32716 | TO-92 | 2000 / Tape & Ammo Box |
| BC327-016ZL1G | 32716 | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| BC327-25RL1 | 7-25 | TO-92 | 2000 / Tape & Reel |
| BC327-25RL1G | 7-25 | TO-92 (Pb-Free) | 2000 / Tape & Reel |
| BC327-25ZL1 | 32725 | TO-92 | 2000 / Tape & Ammo Box |
| BC327-25ZL1G | 32725 | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| BC327-040 | 327 | TO-92 | 2000 / Tape & Reel |
| BC327-040G | 327 | TO-92 (Pb-Free) | 2000 / Tape & Reel |
| BC327-40ZL1 | 7-40 | TO-92 | 2000 / Tape & Ammo Box |
| BC327-40ZL1G | 7-40 | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AL



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |

STYLE 17:

- PIN 1. COLLECTOR
- BASE
- EMITTER

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