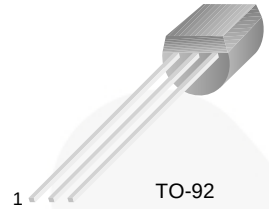
October 2014

# BC327
# PNP Epitaxial Silicon Transistor

## Features

- Switching and Amplifier Applications
- Suitable for AF-Driver Stages and Low-Power Output Stages
- Complement to BC337 / BC338




TO-92

1. Collector 2. Base 3. Emitter

## Ordering Information

| Part Number | Top Mark | Package | Packing Method |
|---|---|---|---|
| BC327BU | BC327 | TO-92 3L | Bulk |
| BC32716BU | BC32716 | TO-92 3L | Bulk |
| BC32716TA | BC32716 | TO-92 3L | Ammo |
| BC32725BU | BC32725 | TO-92 3L | Bulk |
| BC32725TA | BC32725 | TO-92 3L | Ammo |
| BC32740BU | BC32740 | TO-92 3L | Bulk |
| BC32740TA | BC32740 | TO-92 3L | Ammo |

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A$ = 25°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 | °C |
| $T_{STG}$ | Storage Temperature | -55 to 150 | °C |

## Thermal Characteristics[1]

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $P_D$ | Power Dissipation | 625 | mW |
| | Derate Above 25°C | 5.0 | mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 200 | °C/W |

**Note:**

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

## Electrical Characteristics

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = -10 mA, $I_B$ = 0 | -45 | | | V |
| $BV_{CES}$ | Collector-Emitter Breakdown Voltage | $I_C$ = -0.1 mA, $V_{BE}$ = 0 | -50 | | | V |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = -10 µA, $I_C$ = 0 | -5 | | | V |
| $I_{CES}$ | Collector Cut-Off Current | $V_{CE}$ = -45 V, $I_B$ = 0 | | -2 | -100 | nA |
| $h_{FE1}$ | DC Current Gain | $V_{CE}$ = -1 V, $I_C$ = -100 mA | 100 | | 630 | |
| $h_{FE2}$ | | $V_{CE}$ = -1 V, $I_C$ = -300 mA | 60 | | | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage | $I_C$ = -500 mA, $I_B$ = -50 mA | | | -0.7 | V |
| $V_{BE}$(on) | Base-Emitter On Voltage | $V_{CE}$ = -1 V, $I_C$ = -300 mA | | | -1.2 | V |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$ = -5 V, $I_C$ = -10 mA, f = 20 MHz | | 100 | | MHz |
| $C_{ob}$ | Output Capacitance | $V_{CB}$ = -10 V, $I_E$ = 0, f = 1 MHz | | 12 | | pF |

## $h_{FE}$ Classification

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

## Typical Performance Characteristics

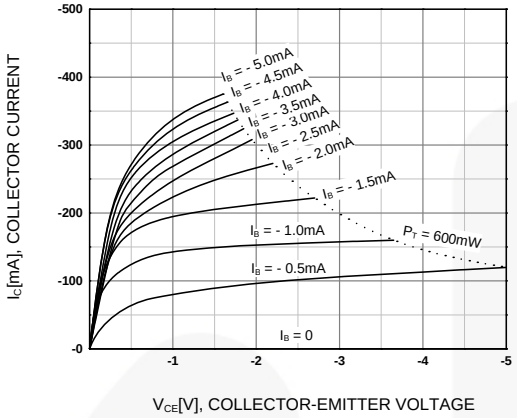



**Figure 1. Static Characteristic**

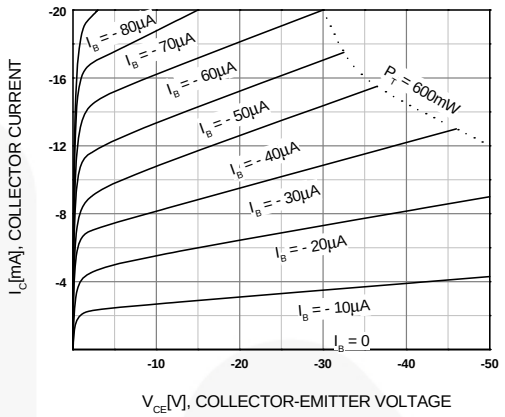



**Figure 2. Static Characteristic**

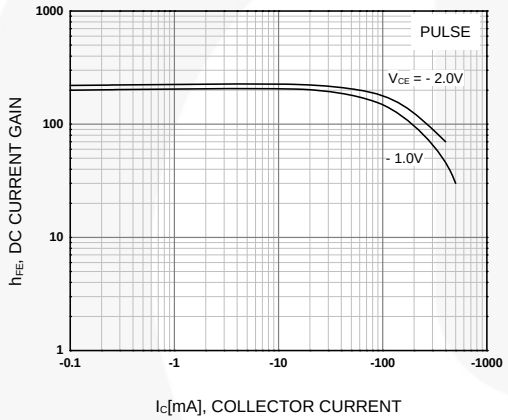



**Figure 3. DC current Gain**

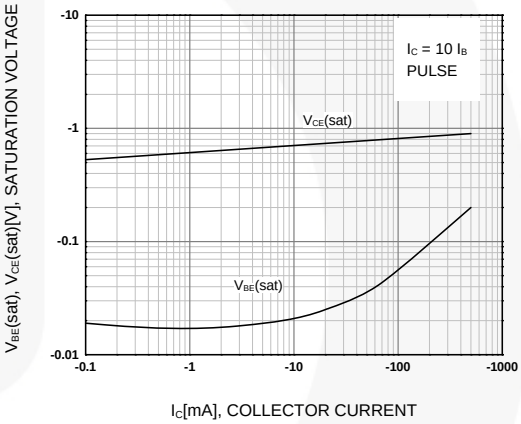



**Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage**

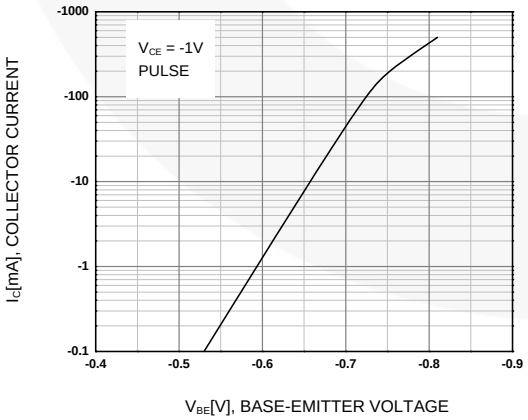



**Figure 5. Base-Emitter On Voltage**

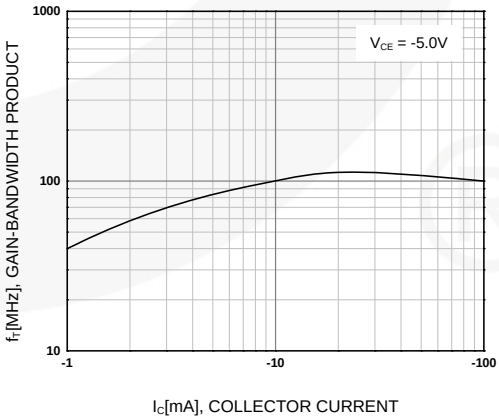
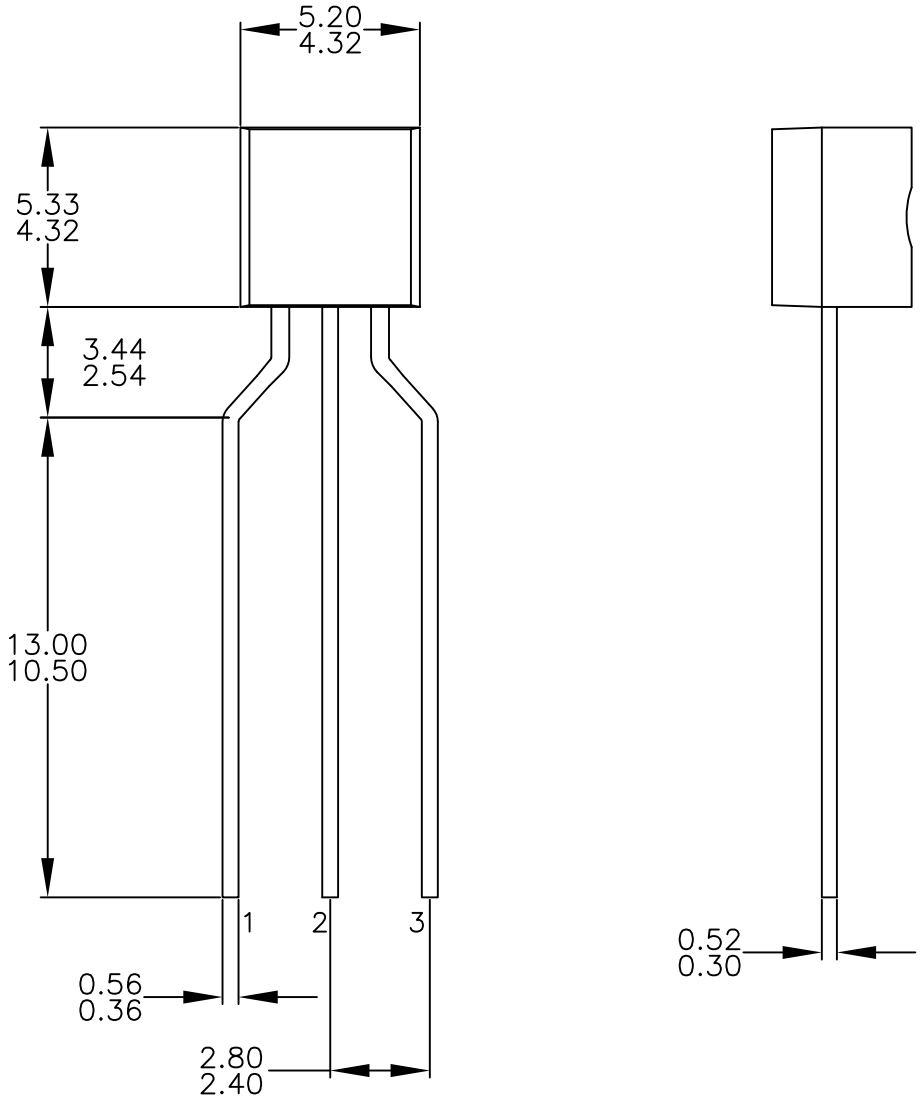
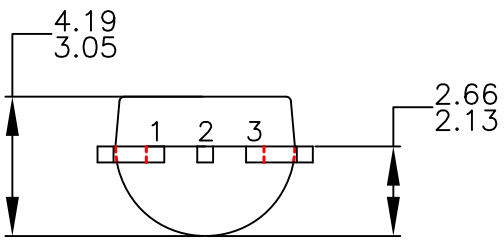



**Figure 6. Gain Bandwidth Product**



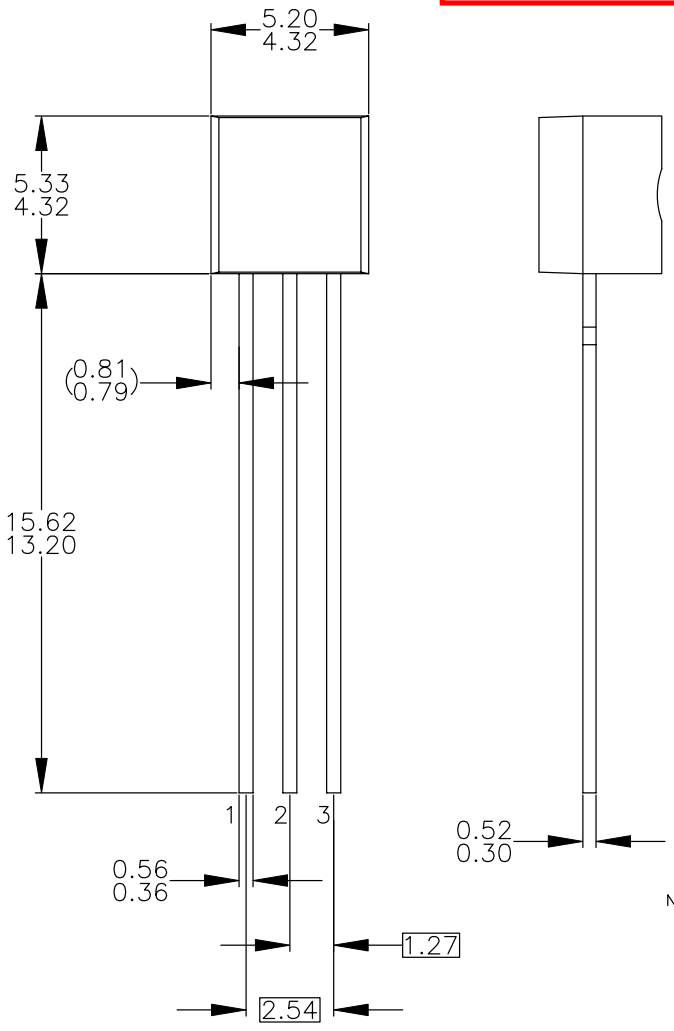

NOTES: UNLESS OTHERWISE SPECIFIED

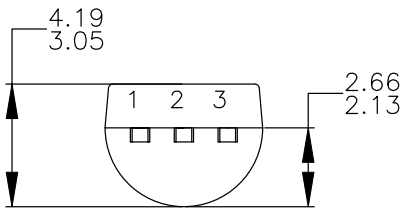
A. DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
B. ALL DIMENSIONS ARE IN MILLIMETERS.
C. DRAWING CONFORMS TO ASME Y14.5M-2009.
D. DRAWING FILENAME: MKT-ZA03FREV3.
E. FAIRCHILD SEMICONDUCTOR.

REVISIONS

| NO. | DESCRIPTION | DATE | NAME/SITE |
|---|---|---|---|
| A | RELEASE TO DOCUMENT CONTROL | MAR.4'96 | RP |
| B | RDRW AS PER STD DWG TEMPLATE. CHG DIM REF FR DUAL DIM INCH[MM] TO SINGLE DIM MM. CHG LD PITCH DIM FR 1.14–1.40 TO 1.27 BSC. ADD DIM 2.54 BSC. CHG PKG WIDTH DIM FR 4.32– 4.70 TO 4.32–4.83; CHG PKG HEIGHT DIM FR 4.32–4.70 TO 4.32–4.78; CHG LD THICK DIM FR 0.30– 0.48 TO 0.30–0.52; DAMBAR–PKG DIM FR 1.27–1.65 TO 0.90–1.65; LD LGH DIM FR 14.47–15.64 TO 14.47–15.62; PKG DIM: 1.02–1.52 TO 0.92–1.52, 3.81–4.45 TO 3.40–4.80; NOTE 2: ADD DMOS "M" OPT'N AND LEGEND; NOTE B PKG 94 JFET OPT'N: CHG D TO S, CHG S TO D. ADD NOTE C; MOVE NOTE B INFO FR PKG 97&98 TO NEW NOTE D. | 40CT1999 | RCM/MRG |
| 3 | CHG LD LEN FR $^{15.61}_{14.07}$ TO $^{15.62}_{13.20}$; CHG MOLD BODY HT FR $^{4.78}_{4.32}$ TO $^{5.33}_{4.32}$; CHG PKG EDGE TO LD EDGE DIST FR (0.81) TO $^{(0.81)}_{(0.79)}$; CHG MOLD BODY WIDTH FR $^{4.83}_{4.32}$ TO $^{5.20}_{4.32}$; ADD PKG THICKNESS DIM 'E'; CHG 's' DIM FR $^{2.41}_{2.15}$ TO $^{2.66}_{2.13}$; REMOVE DAMBAR & EJECTOR PIN LOCATOR FEATURES & DIMENSIONS; REMOVE MOLDED SURFACE & DRAFT ANGLE DIMS; ADD NOTE ON JEDEC REFERENCE; ADD NOTE ON ASME Y14.5M–1994; REMOVE NOTE ON L34Z OPTION; ADD NOTE ON DWG FILENAME. | 12FEB08 | BMR/FSCP |

**APPROVED**
July-14-2008




NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO–92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M–1994.
D) TO–92 (92,94,96,97,98) PIN CONFIGURATION:

| PIN | 92 | | | 94 | | | 96 | | | 97 | | | 98 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | F | M | P | F | M | B | F | M | P | F | M | P | F | M |
| 1 | E | S | S | E | S | S | B | D | G | C | G | D | C | G | D |
| 2 | B | D | G | C | G | D | E | S | S | B | D | G | E | S | S |
| 3 | C | G | D | B | D | G | C | G | D | E | S | S | B | D | G |

LEGEND:
P – BIPOLAR
F – JFET
M – DMOS
E – EMITTER
B – BASE
C – COLLECTOR
D – DRAIN
S – SOURCE
G – GATE

E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEAGLE AT JFET "F" OPTION.
F) DRAWING FILENAME: MKT–ZA03DREV3.

| APPROVALS | DATE |
|---|---|
| DRAWN: J.U. COMPARATIVO JR. | 03APR2008 |
| CHECKED: L. GALERA | |
| APPROVED: M.R. GESTOLE | |
| G.S. BAJE | |

PROJECTION INCH [MM]

FAIRCHILD SEMICONDUCTOR™

3LD,TO–92,MOLDED
STD STRAIGHT LD
(NO EOL CODE)

| SCALE | SIZE | DRAWING NUMBER | REV |
|---|---|---|---|
| 1:1 | N/A | MKT–ZA03D | 3 |

FORMERLY: N/A SHEET : 1 OF 1

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