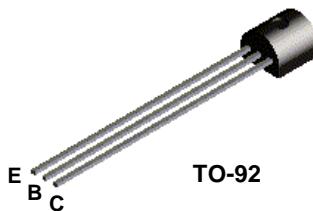




## BC337-16 BC337-25



### NPN General Purpose Amplifier

This device is designed for use as general purpose amplifiers and switches requiring collector currents to 500 mA. Sourced from Process 12. See TN3019A for characteristics.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

| Symbol         | Parameter  | Value       | Units |
|----------------|--|-------------|-------|
| $V_{CEO}$      | Collector-Emitter Voltage                        | 45          | V     |
| $V_{CES}$      | Collector-Base Voltage                           | 50          | V     |
| $V_{EBO}$      | Emitter-Base Voltage                             | 5.0         | V     |
| $I_c$          | Collector Current - Continuous                   | 1.0         | A     |
| $T_J, T_{stg}$ | Operating and Storage Junction Temperature Range | -55 to +150 | °C    |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

TA = 25°C unless otherwise noted

| Symbol          | Characteristic                                | Max                 | Units       |
|-----------------|---|---------------------|-------------|
|                 |   | BC337-16 / BC337-25 |             |
| $P_D$           | Total Device Dissipation<br>Derate above 25°C | 625<br>5.0          | mW<br>mW/°C |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case          | 83.3                | °C/W        |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient       | 200                 | °C/W        |

## NPN General Purpose Amplifier

(continued)

## Electrical Characteristics

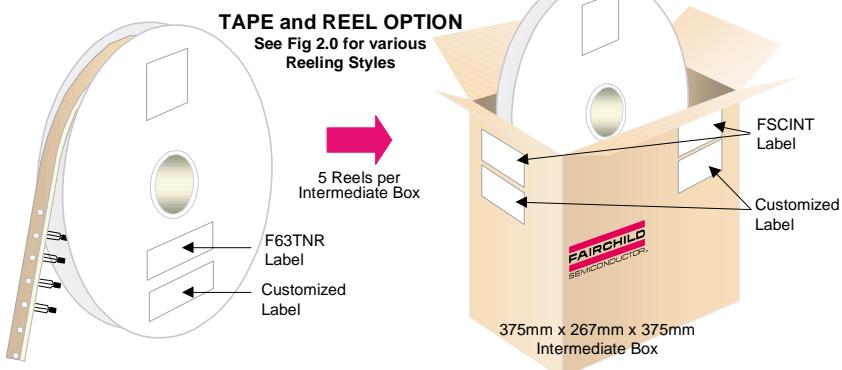
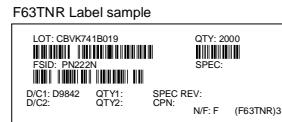
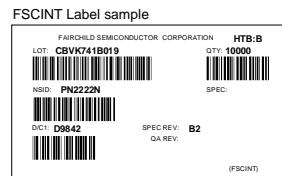
TA = 25°C unless otherwise noted

| Symbol                     | Parameter                            | Test Conditions   | Min              | Max        | Units               |
|----------------------------|--------------------------------------|---|------------------|------------|---------------------|
| <b>OFF CHARACTERISTICS</b> |                                      |   |                  |            |                     |
| $V_{(BR)CEO}$              | Collector-Emitter Breakdown Voltage  | $I_C = 10 \text{ mA}, I_B = 0$  | 45               |            | V                   |
| $V_{(BR)CES}$              | Collector-Base Breakdown Voltage     | $I_C = 100 \mu\text{A}, I_E = 0$  | 50               |            | V                   |
| $V_{(BR)EBO}$              | Emitter-Base Breakdown Voltage       | $I_E = 100 \mu\text{A}, I_C = 0$  | 5.0              |            | V                   |
| $I_{CBO}$                  | Collector Cutoff Current             | $V_{CB} = 20 \text{ V}, I_E = 0, T_A = +25 \text{ }^\circ\text{C}$<br>$V_{CB} = 20 \text{ V}, I_E = 0, T_A = +150 \text{ }^\circ\text{C}$ |                  | 100<br>5.0 | nA<br>$\mu\text{A}$ |
| $I_{EBO}$                  | Emitter Cutoff Current               | $V_{EB} = 5.0 \text{ V}, I_C = 0$   |                  | 10         | $\mu\text{A}$       |
| <b>ON CHARACTERISTICS</b>  |                                      |   |                  |            |                     |
| $h_{FE}$                   | DC Current Gain                      | $V_{CE} = 1.0 \text{ V}, I_C = 100 \text{ mA}$<br><b>337-16</b><br><b>337-25</b><br>$V_{CE} = 1.0 \text{ V}, I_C = 500 \text{ mA}$        | 100<br>160<br>40 | 250<br>400 |                     |
| $V_{CE(\text{sat})}$       | 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              | $V_{CE} = 1.0 \text{ V}, I_C = 500 \text{ mA}$  |                  | 1.2        | V                   |

## TO-92 Tape and Reel Data



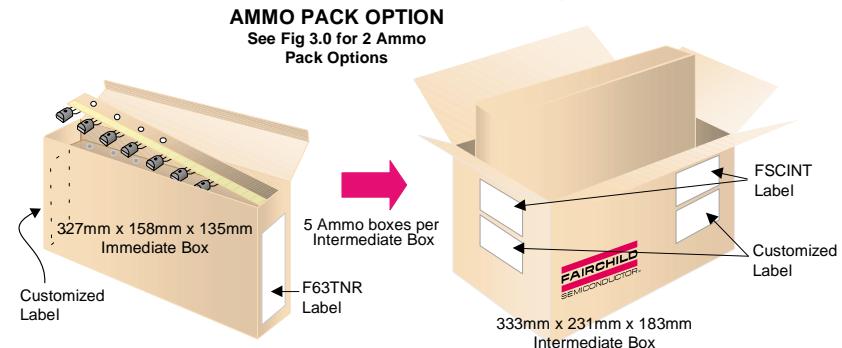
### TO-92 Packaging Configuration: Figure 1.0



#### TO-92 TNR/AMMO PACKING INFORMATION

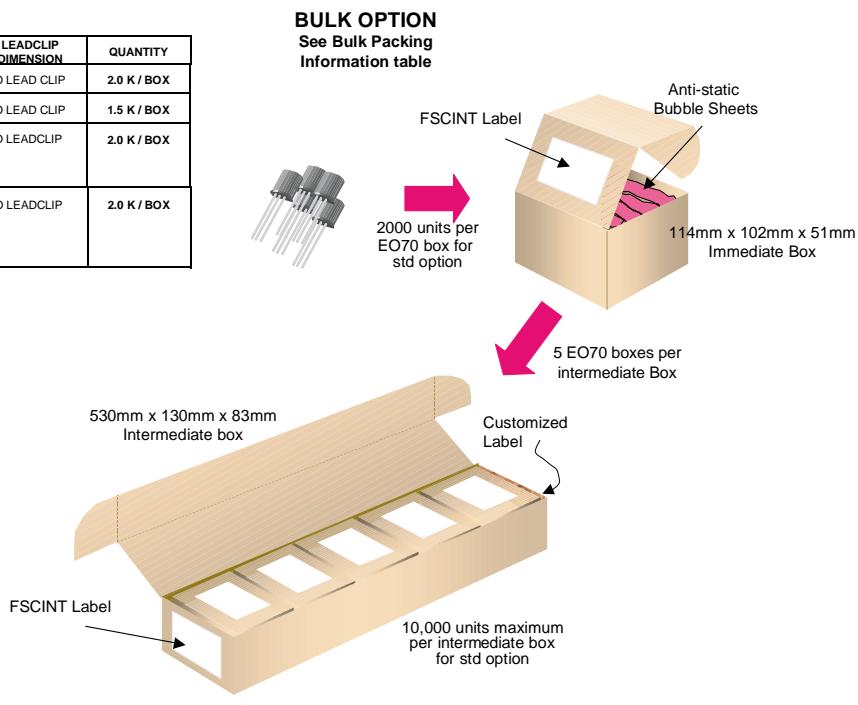
| Packing | Style | Quantity | EOL code |
|---------|-------|----------|----------|
| Reel    | A     | 2,000    | D26Z     |
|         | E     | 2,000    | D27Z     |
| Ammo    | M     | 2,000    | D74Z     |
|         | P     | 2,000    | D75Z     |

Unit weight = 0.22 gm  
Reel weight with components = 1.04 kg  
Ammo weight with components = 1.02 kg  
Max quantity per intermediate box = 10,000 units



#### (TO-92) BULK PACKING INFORMATION

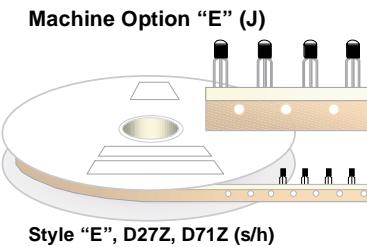
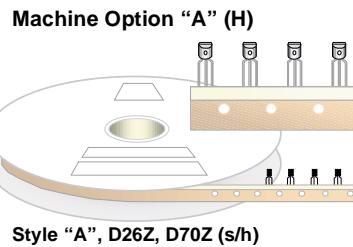
| EOL CODE    | DESCRIPTION  | LEADCLIP DIMENSION | QUANTITY    |
|-------------|--|--------------------|-------------|
| J18Z        | TO-18 OPTION STD   | NO LEAD CLIP       | 2.0 K / BOX |
| J05Z        | TO-5 OPTION STD  | NO LEAD CLIP       | 1.5 K / BOX |
| NO EOL CODE | TO-92 STANDARD STRAIGHT FOR: PKG 92, 94 (NO PROELECTRON SERIES), 96                  | NO LEADCLIP        | 2.0 K / BOX |
| L34Z        | TO-92 STANDARD STRAIGHT FOR: PKG 94 (PROELECTRON SERIES BCXXX, BFXXX, BSXXX), 97, 98 | NO LEADCLIP        | 2.0 K / BOX |



## TO-92 Tape and Reel Data, continued

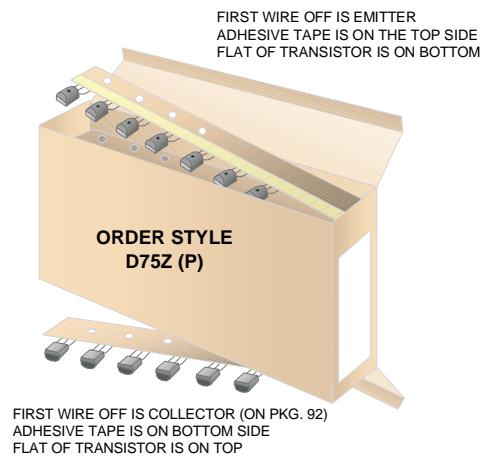
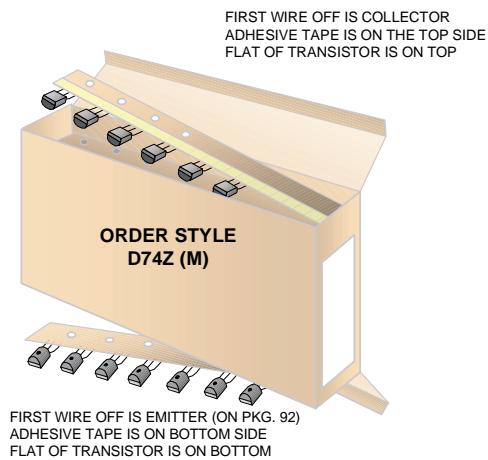
### TO-92 Reeling Style

Configuration: Figure 2.0



### TO-92 Radial Ammo Packaging

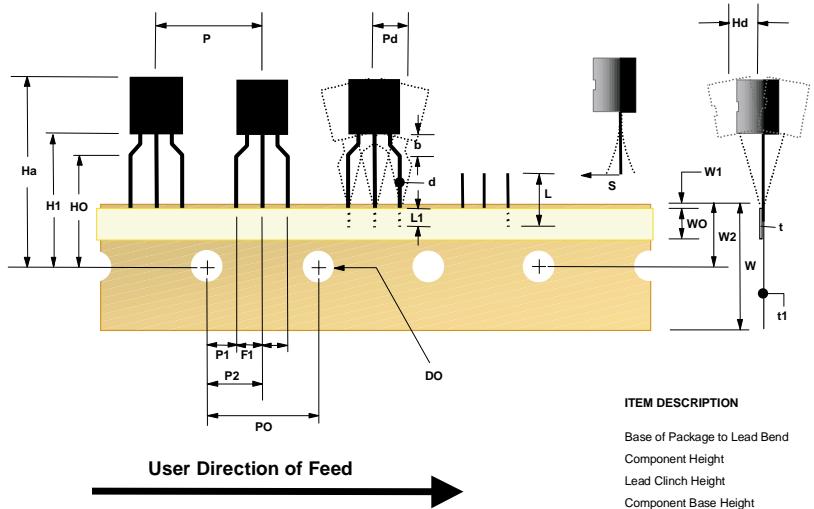
Configuration: Figure 3.0



## TO-92 Tape and Reel Data, continued

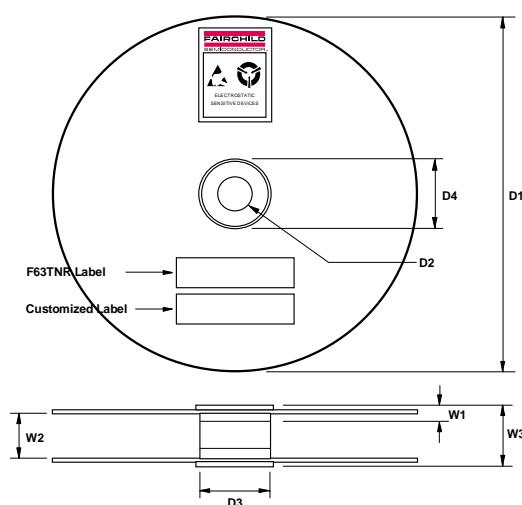
### TO-92 Tape and Reel Taping

Dimension Configuration: Figure 4.0



### TO-92 Reel

Configuration: Figure 5.0



| ITEM DESCRIPTION                   | SYMBOL | DIMENSION              |
|------------------------------------|--------|------------------------|
| Base of Package to Lead Bend       | b      | 0.098 (max)            |
| Component Height                   | Ha     | 0.928 (+/- 0.025)      |
| Lead Clinch Height                 | HO     | 0.630 (+/- 0.020)      |
| Component Base Height              | H1     | 0.748 (+/- 0.020)      |
| Component Alignment ( side/side )  | Pd     | 0.040 (max)            |
| Component Alignment ( front/back ) | Hd     | 0.031 (max)            |
| Component Pitch                    | P      | 0.500 (+/- 0.020)      |
| Feed Hole Pitch                    | PO     | 0.500 (+/- 0.008)      |
| Hole Center to First Lead          | P1     | 0.150 (+0.009, -0.010) |
| Hole Center to Component Center    | P2     | 0.247 (+/- 0.007)      |
| Lead Spread                        | F1/F2  | 0.104 (+/- 0.010)      |
| Lead Thickness                     | d      | 0.018 (+0.002, -0.003) |
| Cut Lead Length                    | L      | 0.429 (max)            |
| Taped Lead Length                  | L1     | 0.209 (+0.051, -0.052) |
| Taped Lead Thickness               | t      | 0.032 (+/- 0.006)      |
| Carrier Tape Thickness             | t1     | 0.021 (+/- 0.006)      |
| Carrier Tape Width                 | W      | 0.708 (+0.020, -0.019) |
| Hold - down Tape Width             | WO     | 0.236 (+/- 0.012)      |
| Hold - down Tape position          | W1     | 0.035 (max)            |
| Feed Hole Position                 | W2     | 0.360 (+/- 0.025)      |
| Sprocket Hole Diameter             | DO     | 0.157 (+0.008, -0.007) |
| Lead Spring Out                    | S      | 0.004 (max)            |

Note : All dimensions are in inches.

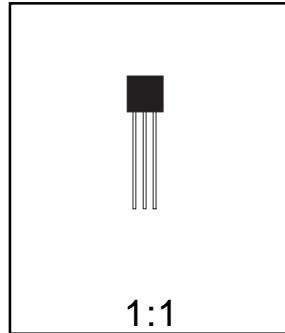
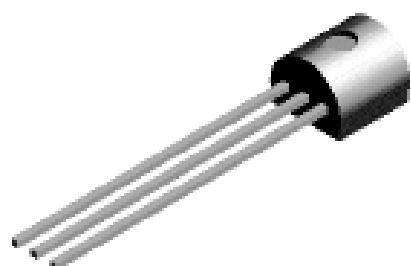
| ITEM DESCRIPTION               | SYMBOL | MINIMUM | MAXIMUM |
|--------------------------------|--------|---------|---------|
| Reel Diameter                  | D1     | 13.975  | 14.025  |
| Arbor Hole Diameter (Standard) | D2     | 1.160   | 1.200   |
| (Small Hole)                   | D2     | 0.650   | 0.700   |
| Core Diameter                  | D3     | 3.100   | 3.300   |
| Hub Recess Inner Diameter      | D4     | 2.700   | 3.100   |
| Hub Recess Depth               | W1     | 0.370   | 0.570   |
| Flange to Flange Inner Width   | W2     | 1.630   | 1.690   |
| Hub to Hub Center Width        | W3     |         | 2.090   |

Note: All dimensions are inches

## TO-92 Package Dimensions

**FAIRCHILD**  
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## TO-92 (FS PKG Code 92, 94, 96)



1:1

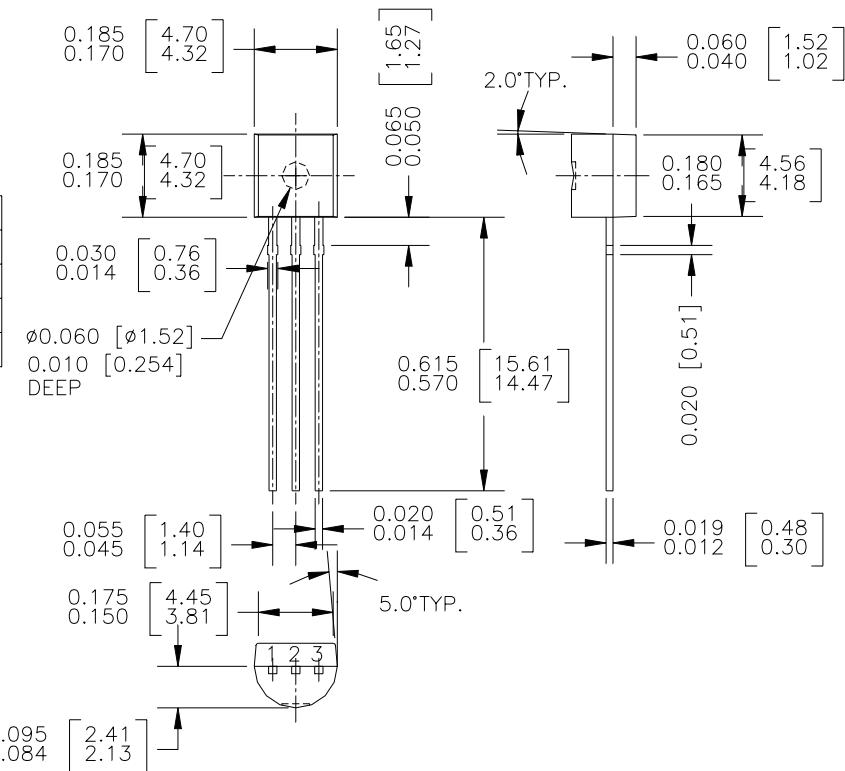
Scale 1:1 on letter size paper

Dimensions shown below are  
inches [millimeters]

Part Weight per unit (gram): 0.1977

TO-92 (92,94,96)

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



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