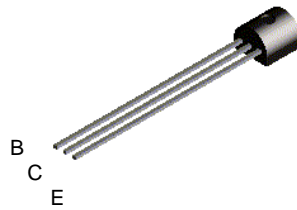


# BC212L



TO-92

## PNP General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 300mA.  
Sourced from Process 68.

### Absolute Maximum Ratings\*

T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current - Continuous	300	mA
T <sub>J, Tstg</sub>	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°C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	83.3	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	200	°C/W

**PNP General Purpose Amplifier**

(continued)

**Electrical Characteristics** $T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 2 \text{ mA}$	50		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}$	60		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ } \mu\text{A}$	5		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 30\text{V}$		15	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 4\text{V}$		15	nA
<b>ON CHARACTERISTICS*</b>					
$h_{FE}$	DC Current Gain	$I_C = 10 \text{ } \mu\text{A}, V_{CE} = 5 \text{ V}$ $I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}$	40 60	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$		0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$		1.1	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}$	0.6	0.72	V
<b>SMALL SIGNAL CHARACTERISTICS</b>					
$C_{ob}$	Output Capacitance	$V_{CB} = 10 \text{ V}, f = 1.0 \text{ MHz}$		10	pF
$h_{fe}$	Small Signal Current Gain	$I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}, f = 1\text{kHz}$	60		-
NF	Noise Figure	$I_C = 200 \text{ } \mu\text{A}, V_{CE} = 5 \text{ V}, f = 1\text{kHz},$ $R_g = 2\text{K}\Omega, BW = 200\text{Hz}$		10	dB
fT	Current Gain-Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	200		MHz

\*Pulse Test: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2.0%

# TO-92 Tape and Reel Data and Package Dimensions

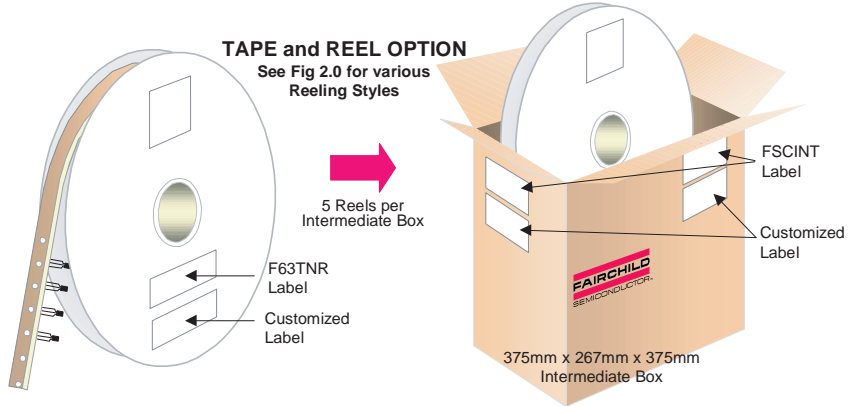


## TO-92 Packaging Configuration: Figure 1.0

FSCINT Label sample



F63TNR Label sample



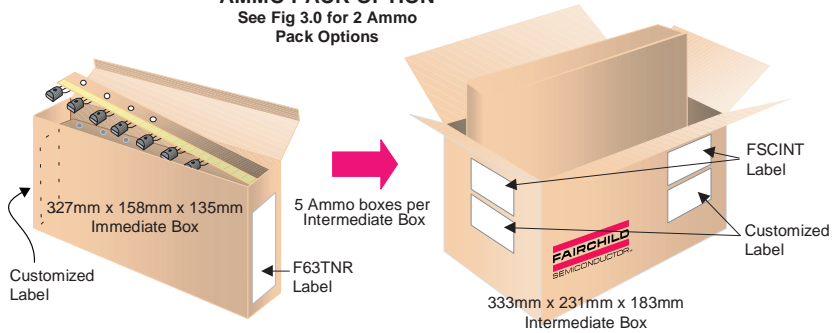
### TO-92 TNR/AMMO PACKING INFORMATION

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

### AMMO PACK OPTION

See Fig 3.0 for 2 Ammo Pack Options

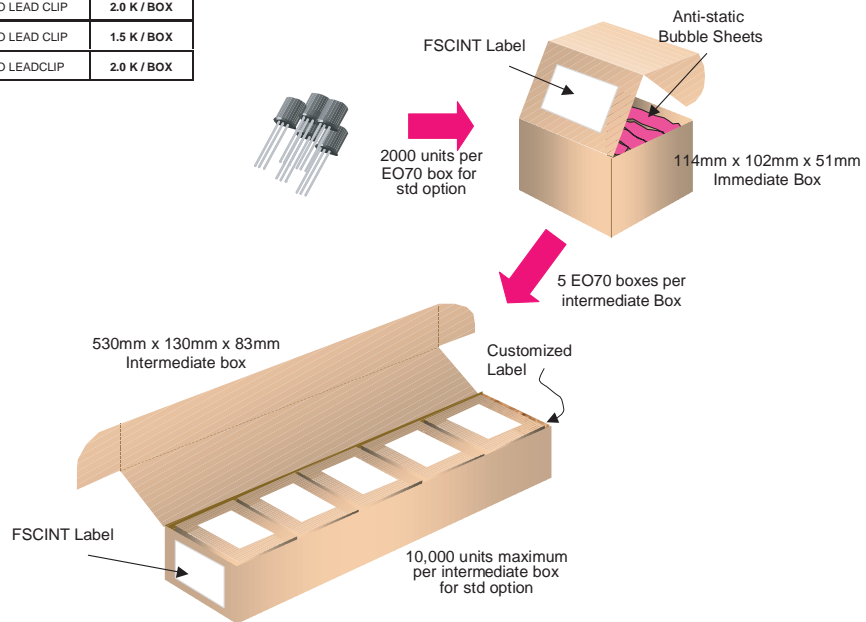


### (TO-92) BULK PACKING INFORMATION

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	NO LEADCLIP	2.0 K / BOX

### BULK OPTION

See Bulk Packing Information table

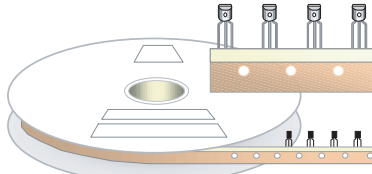


## TO-92 Tape and Reel Data and Package Dimensions, continued

### TO-92 Reeling Style

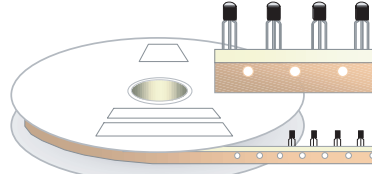
Configuration: Figure 2.0

Machine Option "A" (H)



Style "A", D26Z, D70Z (s/h)

Machine Option "E" (J)

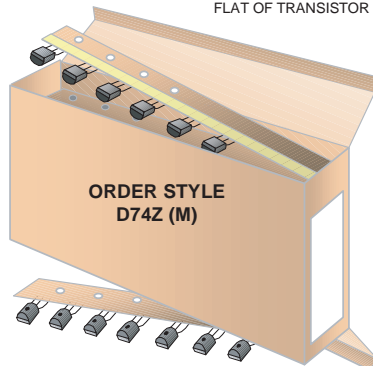


Style "E", D27Z, D71Z (s/h)

### TO-92 Radial Ammo Packaging

Configuration: Figure 3.0

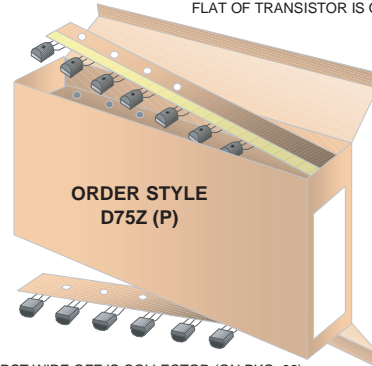
FIRST WIRE OFF IS COLLECTOR  
ADHESIVE TAPE IS ON THE TOP SIDE  
FLAT OF TRANSISTOR IS ON TOP



ORDER STYLE  
D74Z (M)

FIRST WIRE OFF IS EMITTER (ON PKG. 92)  
ADHESIVE TAPE IS ON BOTTOM SIDE  
FLAT OF TRANSISTOR IS ON BOTTOM

FIRST WIRE OFF IS EMITTER  
ADHESIVE TAPE IS ON THE TOP SIDE  
FLAT OF TRANSISTOR IS ON BOTTOM



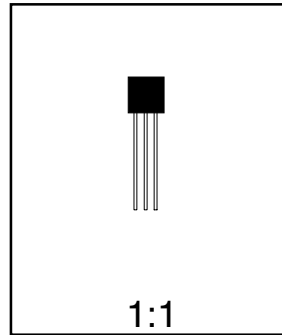
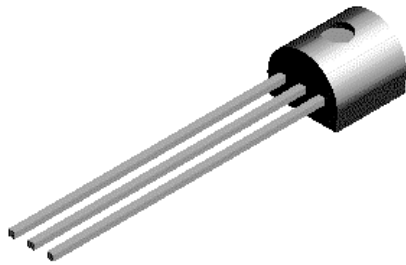
ORDER STYLE  
D75Z (P)

FIRST WIRE OFF IS COLLECTOR (ON PKG. 92)  
ADHESIVE TAPE IS ON BOTTOM SIDE  
FLAT OF TRANSISTOR IS ON TOP



# TO-92 Tape and Reel Data and Package Dimensions

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



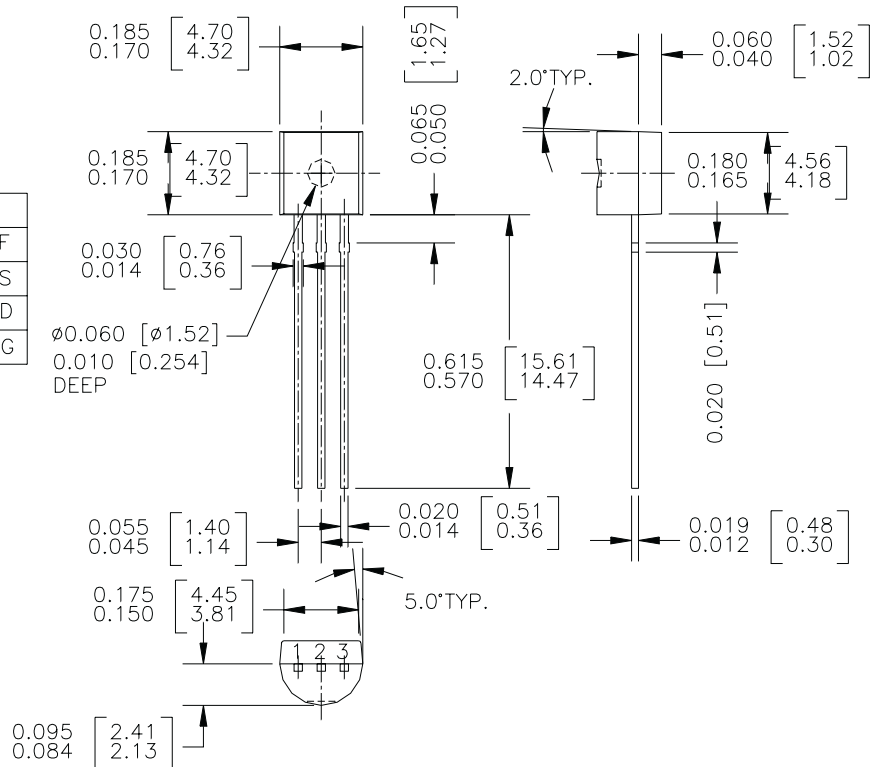
Scale 1:1 on letter size paper

Dimensions shown below are in:  
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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CROSSVOLT™	POP™	UHC™
E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
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FAST®	Quiet Series™	
FASTr™	SuperSOT™-3	
GTO™	SuperSOT™-6	

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