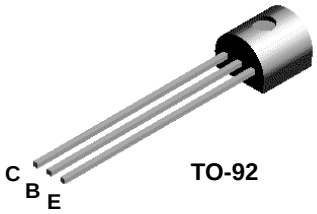
FAIRCHILD
SEMICONDUCTOR TM

PN3563



TO-92

NPN RF Amplifier

This device is designed for use as RF amplifiers, oscillators and multipliers with collector currents in the 1.0 mA to 30 mA range. Sourced from Process 43. See PN918 for characteristics.

Absolute Maximum Ratings* TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	15	V
V_{CBO}	Collector-Base Voltage	30	V
V_{EBO}	Emitter-Base Voltage	2.0	V
I_C	Collector Current - Continuous	50	mA
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
		PN3563	
P_D	Total Device Dissipation Derate above 25°C	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

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Electrical Characteristics

TA= 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage*	I_C = 3.0 mA, I_B = 0	15		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100 μA, I_E = 0	30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 μA, I_C = 0	2.0		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 15 V, I_E = 0 V_{CB} = 15 V, T_A = 150°C		0.05 5.0	μA nA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	I_C = 8.0 mA, V_{CE} = 10 V	20	200	
SMALL SIGNAL CHARACTERISTICS					
f_T	Current Gain - Bandwidth Product	I_C = 8.0 mA, V_{CE} = 10 V, f = 100 MHz	600	1500	MHz
C_{obo}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz V_{CB} = 0, I_E = 0, f = 1.0 MHz		1.7 3.0	pF pF
C_{ibo}	Input Capacitance	V_{BE}= 0.5 V, I_C = 0, f = 140 MHz		2.0	pF
h_{fe}	Small-Signal Current Gain	I_C = 8.0 mA, V_{CE} = 10 V, f = 1.0 MHz	20	250	
rb'C_C	Collector Base Time Constant	I_C = 8.0 mA, V_{CE} = 10 V, f = 79.8 MHz	8.0	25	pS
FUNCTIONAL TEST					
G_{pe}	Amplifier Power Gain	I_C = 8.0 mA, V_{CB} = 10 V, f = 200 MHz	14	26	dB

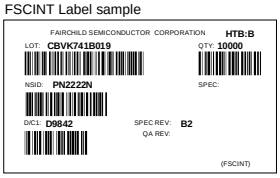
*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

TO-92 Tape and Reel Data

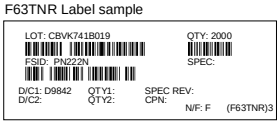
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TO-92 Packaging Configuration: Figure 1.0

FSCINT Label sample

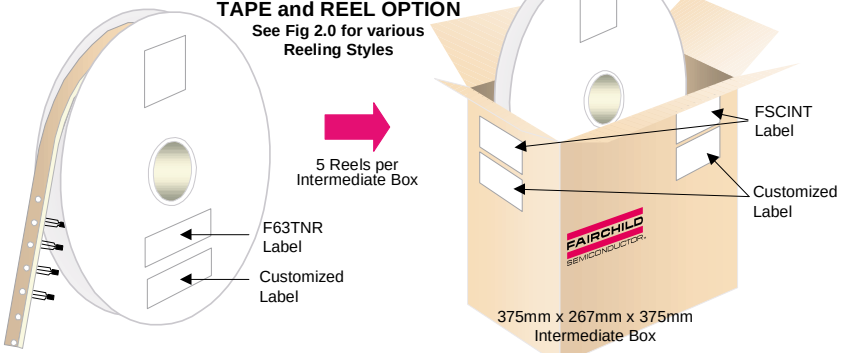


F63TNR Label sample



TAPE and REEL OPTION

See Fig 2.0 for various Reeling Styles



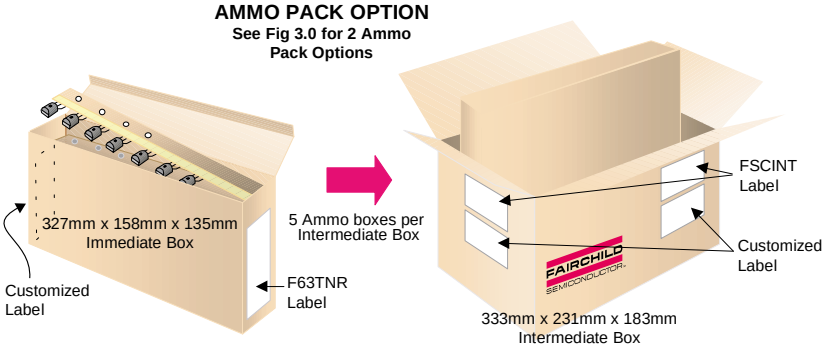
TO-92 TNR/AMMO PACKING INFROMATION

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

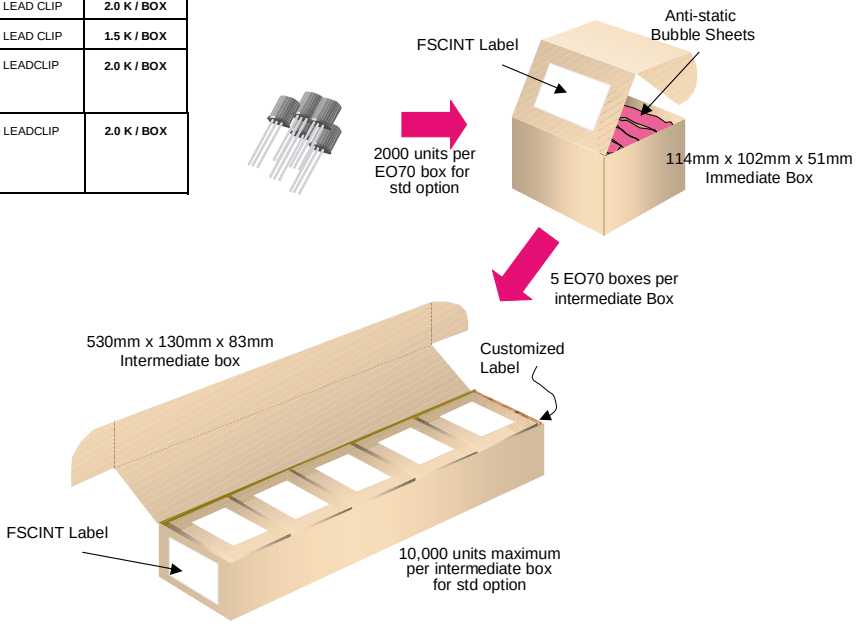


(TO-92) BULK PACKING INFORMATION

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 FOR: PKG 92, 94 (NON PROELECTRON SERIES), 96	NO LEADCLIP	2.0 K / BOX
L34Z	TO-92 STANDARD STRAIGHT FOR: PKG 94 (PROELECTRON SERIES BCXXX, BFXXX, BSRXXX), 97, 98	NO LEADCLIP	2.0 K / BOX

BULK OPTION

See Bulk Packing Information table

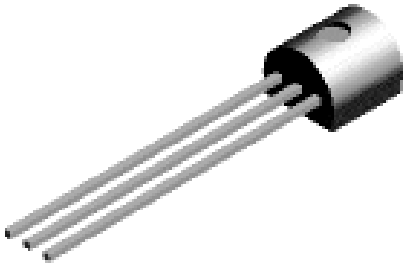


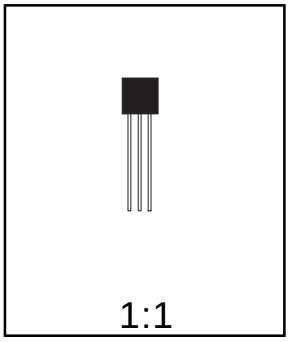
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TO-92 Package Dimensions

FAIRCHILD SEMICONDUCTOR™

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





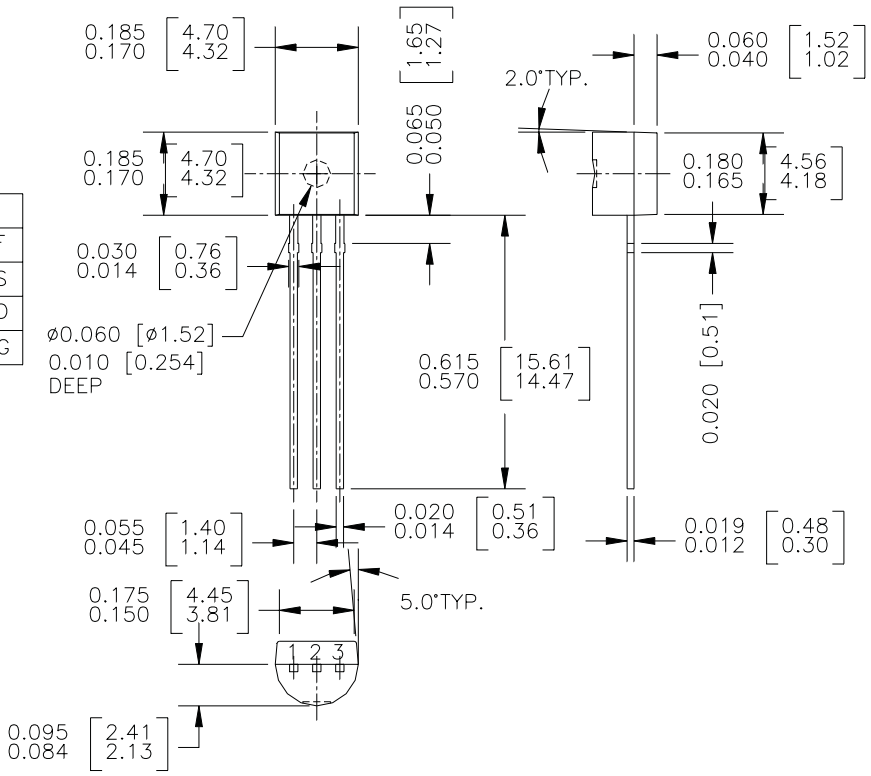
Scale 1:1 on letter size paper

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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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

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Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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