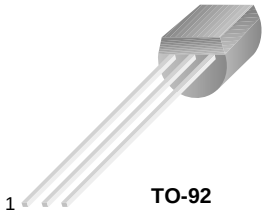
FAIRCHILD SEMICONDUCTOR®

September 2009

2SA733
PNP General Purpose Amplifier

Features

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



TO-92

1. Emitter 2. Collector 3.Base

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5.0	V
I_C	Collector current - Continuous	-500	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 T_A=25°C unless otherwise noted

Symbol	Parameter	Max	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW 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

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
V_{CBO}	Collector-Base Breakdown Voltage	I_C = -10μA, I_E = 0	-60			V
V_{CEO}	Collector-Emitter Breakdown Voltage	I_C = -1mA, I_B = 0	-50			V
V_{EBO}	Emitter-Base Breakdown Voltage	I_E = -10μA, I_C = 0	-5.0			V
I_{CBO}	Collector Cut-off Current	V_{CB} = -60V, I_E = 0			-100	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} = -5V, I_C = 0			-100	nA
On Characteristics						
h_{FE}	DC Current Gain	V_{CE} = -6V, I_C = -1mA	90		600	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -100mA, I_B = -10mA	-15		-300	mV
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = -6V, I_C = -1mA	-580		-680	mV
Small Signal Characteristics						
f_T	Current Gain Bandwidth Product	V_{CE} = -6V, I_C = -10mA	50			MHz
C_{ob}	Output Capacitance	V_{CB} = -10V, I_E = 0 f = 1.0MHz			6	pF
NF	Noise Figure	V_{CE} = -6V, I_C = -0.3mA R_G = 10kΩ, f = 100Hz			20	dB

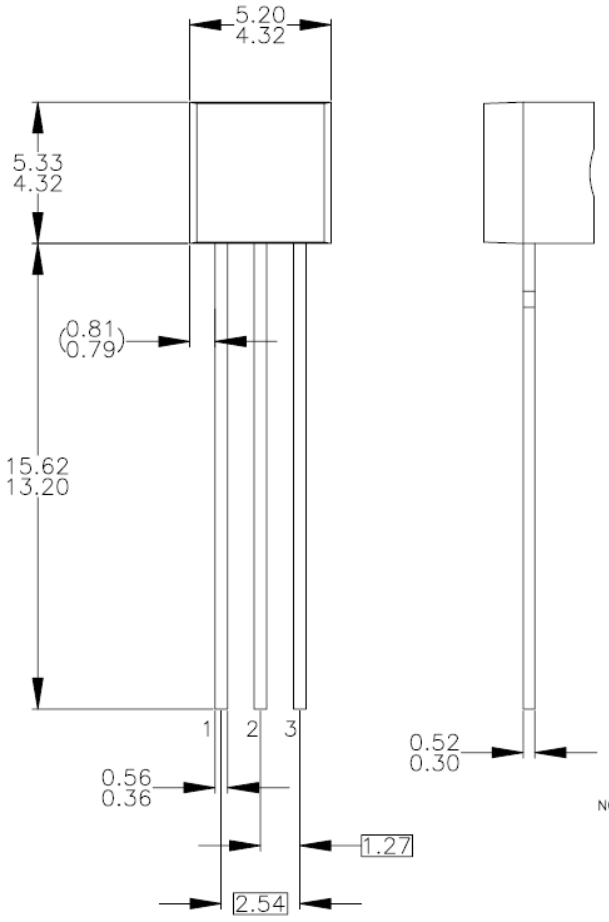
***** Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

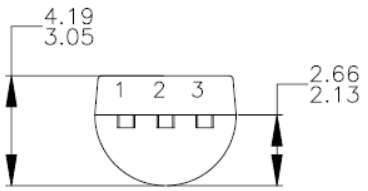
h_{FE} Classification

Classification	R	Q	P	K
h_{FE}	90 ~ 180	135 ~ 270	200 ~ 400	300 ~ 600

Physical Dimension

TO-92





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	P	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.

Dimensions in Millimeters

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Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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