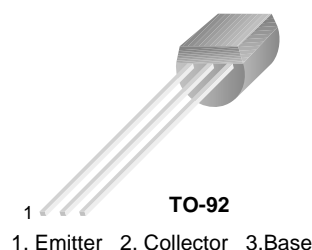


# 2SA733

## PNP General Purpose Amplifier

### Features

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



### Absolute Maximum Ratings\* $T_A=25^\circ\text{C}$ 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	$^\circ\text{C}$

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

Symbol	Parameter	Max	Units
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	625 5.0	mW mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^\circ\text{C}/\text{W}$

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

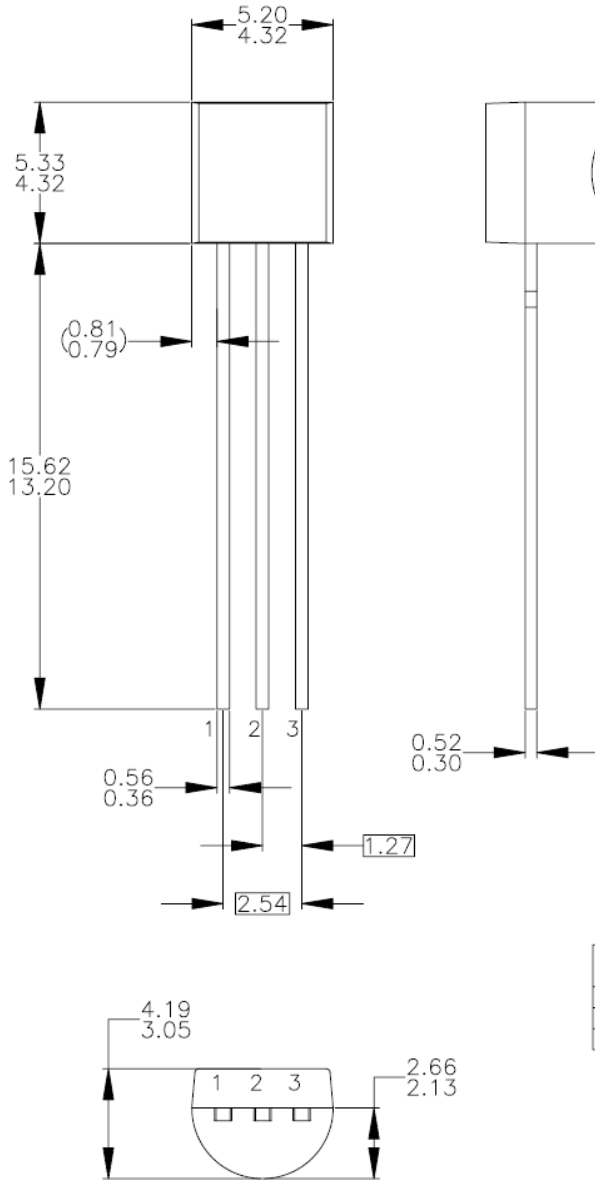
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-60			V
$V_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	-50			V
$V_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A},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

\* Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$  **$h_{FE}$  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      E - EMITTER      D - DRAIN  
F - JFET          B - BASE            S - SOURCE  
M - DMOS        C - COLLECTOR      G - GATE







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

Dimensions in Millimeters



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	Power-SPM™		

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**Definition of Terms**

Datasheet Identification	Product Status	Definition
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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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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