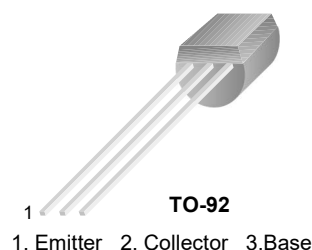


2SA733

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°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

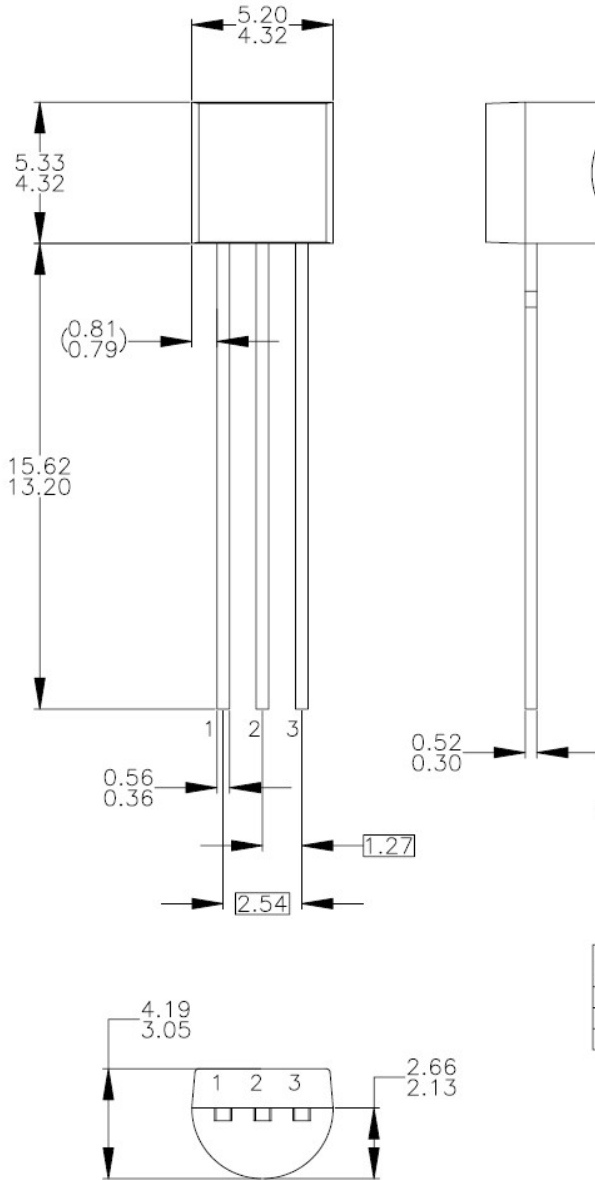
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
V_{CBO}	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-60			V
V_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	-50			V
V_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-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
On Characteristics						
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
Small Signal Characteristics						
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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Current Transfer Logic™	GTO™	 ™	TinyPower™
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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.
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