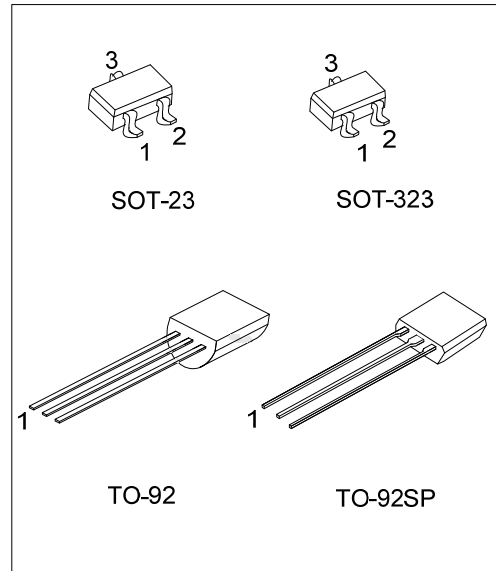




# 2SA733

## PNP SILICON TRANSISTOR

### LOW FREQUENCY AMPLIFIER PNP EPITAXIAL SILICON TRANSISTOR



■ **DESCRIPTION**

The UTC **2SA733** is a low frequency amplifier.

■ **FEATURES**

- \* Collector-emitter voltage:  
BV<sub>CEO</sub>=-50V
- \* Collector current up to -150mA
- \* High h<sub>FE</sub> linearity
- \* Complimentary to 2SC945

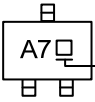
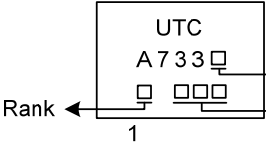
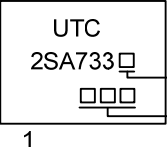
■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SA733L-x-AE3-R	2SA733G-x-AE3-R	SOT-23	B	E	C	Tape Reel
2SA733L-x-AL3-R	2SA733G-x-AL3-R	SOT-323	B	E	C	Tape Reel
2SA733L-x-T92-B	2SA733G-x-T92-B	TO-92	E	C	B	Tape Box
2SA733L-x-T92-K	2SA733G-x-T92-K	TO-92	E	C	B	Bulk
2SA733L-x-T9S-B	2SA733G-x-T9S-B	TO-92SP	E	C	B	Tape Box
2SA733L-x-T9S-K	2SA733G-x-T9S-K	TO-92SP	E	C	B	Bulk

Note: Pin Assignment: B: Base    E: Emitter    C: Collector

<p>2SA733G-x-AE3-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel                  (2) AE3: SOT-23, AL3: SOT-323, T92: TO-92                  T9S: TO-92SP                  (3) x: refer to Classification of h<sub>FE</sub>                  (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING

PACKAGE	MARKING
SOT-23 / SOT-323	 <p>A7</p> <p>L: Lead Free G: Halogen Free</p>
TO-92	 <p>UTC</p> <p>A 7 3 3</p> <p>Rank ← → Date Code</p> <p>1</p> <p>L: Lead Free G: Halogen Free</p>
TO-92SP	 <p>UTC</p> <p>2SA733</p> <p>← → Date Code</p> <p>1</p> <p>L: Lead Free G: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CB0}$	-60	V
Collector-Emitter Voltage		$V_{CEO}$	-50	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Power Dissipation ( $T_C=25^\circ\text{C}$ )	SOT-23	$P_C$	300	mW
	SOT-323		200	mW
	TO-92		750	mW
	TO-92SP		550	mW
Collector Current		$I_C$	-150	mA
Junction Temperature		$T_J$	+125	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=-100\mu\text{A}$ , $I_E=0$	-60			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=-10\text{mA}$ , $I_B=0$	-50			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-100\text{mA}$ , $I_B=-10\text{mA}$		-0.1	-0.3	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-40\text{V}$ , $I_E=0$			-100	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-3\text{V}$ , $I_C=0$			-100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=-6\text{V}$ , $I_C=-1\text{mA}$	90		600	
Current Gain Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}$ , $I_C=-50\text{mA}$	100	190		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		2.0	3.0	pF
Noise Figure	NF	$I_C=-0.1\text{mA}$ , $V_{CE}=-6\text{V}$ $R_G=10\text{k}\Omega$ , $f=100\text{Hz}$		4.0	6.0	dB

■ CLASSIFICATION OF  $h_{FE}$

RANK	R	Q	P	K
RANGE	90-180	135-270	200-400	300-600

## ■ TYPICAL CHARACTERISTICS

Fig.1 Static Characteristics

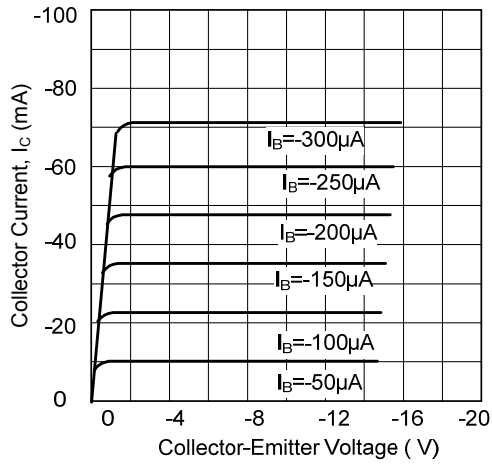


Fig.2 DC Current Gain

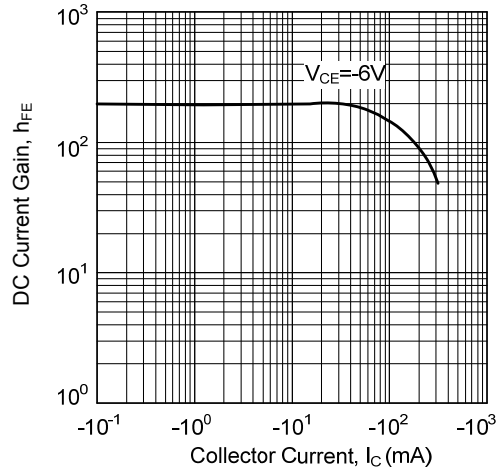


Fig.3 Base-Emitter on Voltage

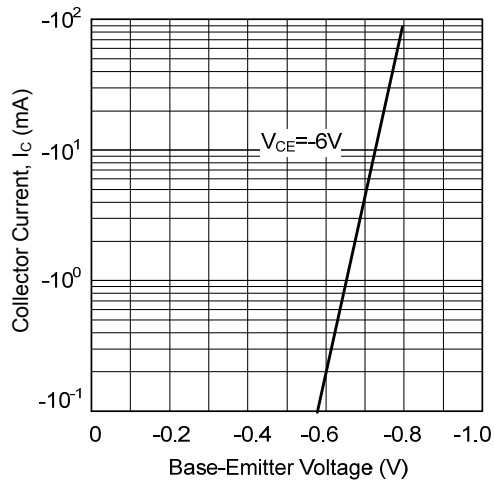


Fig.4 Saturation Voltage

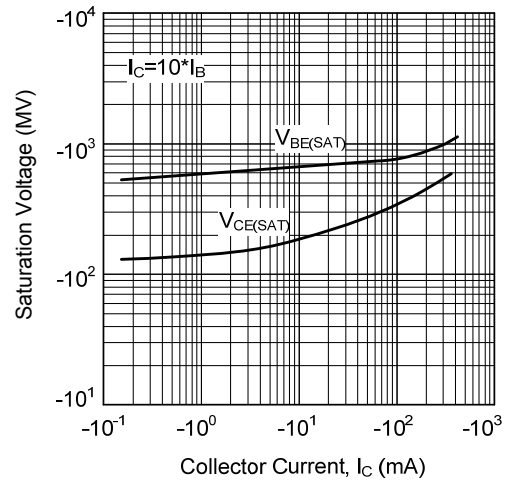


Fig.5 Current Gain-Bandwidth Product

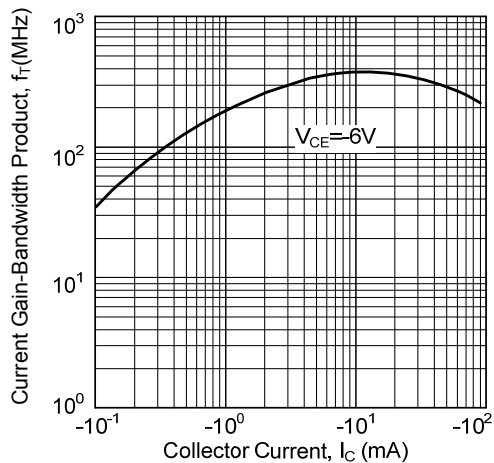
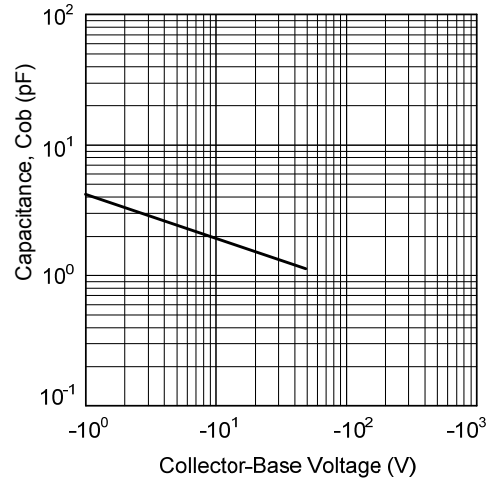
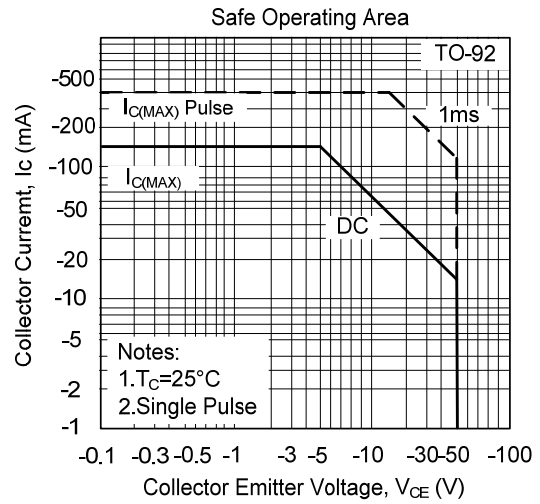
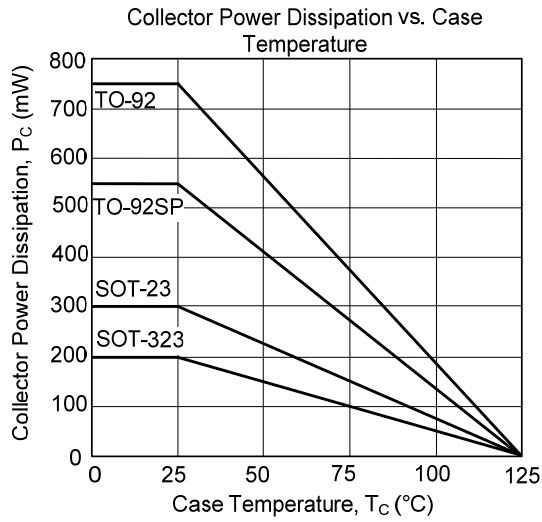


Fig.6 Collector Output Capacitance



■ TYPICAL CHARACTERISTICS (Cont.)



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