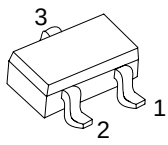
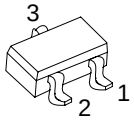
# 2SA733

**PNP SILICON TRANSISTOR**

## LOW FREQUENCY AMPLIFIER PNP EPITAXIAL SILICON TRANSISTOR




SOT-23




SOT-323

*Pb-free plating product number:2SA733L

### ■ DESCRIPTION

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

### ■ FEATURES

* Collector-Emitter voltage:
  $BV_{CBO}$=-50V
* Collector current up to -150mA
* High $h_{FE}$ linearity
* Complimentary to 2SC945

### ■ ORDERING INFORMATION

| Order Number | | Package | Pin Assignment | | | Packing |
|---|---|---|---|---|---|---|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| 2SA733-x-AE3-R | 2SA733L-x-AE3-R | SOT-23 | E | C | B | Tape Reel |
| 2SA733-x-AL3-R | 2SA733L-x-AL3-R | SOT-323 | E | C | B | Tape Reel |

2SA733L-x-AE3-R

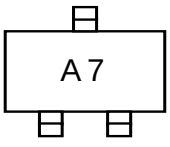
(1)Packing Type — (1) R: Tape Reel

(2)Package Type — (2) AE3: SOT-23, AL3: SOT-323

(3)Rank — (3) x: refer to Classification of $h_{FE}$

(4)Lead Plating — (4) L: Lead Free Plating, Blank: Pb/Sn

### ■ MARKING



## ■ ABSOLUTE MAXIMUM RATING (Ta=25℃, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -60 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | V |
| Collector Dissipation(Ta=25℃) | $P_C$ | 250 | mW |
| Collector Current | $I_C$ | -150 | mA |
| Junction Temperature | $T_J$ | 125 | ℃ |
| Storage Temperature | $T_{STG}$ | -55 ~ +150 | ℃ |

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 (Ta=25℃, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $BV_{CBO}$ | $I_C$=-100μA, $I_E$=0 | -60 | | | V |
| Collector-Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$=-10mA, $I_B$=0 | -50 | | | V |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C$=-100mA, $I_B$=-10mA | | -0.1 | -0.3 | V |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=-40V, $I_E$=0 | | | -100 | nA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=-3V, $I_C$=0 | | | -100 | nA |
| DC Current Gain(note) | $h_{FE}$ | $V_{CE}$=-6V, $I_C$=-1mA | 90 | | 600 | |
| Current Gain Bandwidth Product | $f_T$ | $V_{CE}$=-10V, $I_C$=-50mA | 100 | 190 | | MHz |
| Output Capacitance | Cob | $V_{CB}$=-10V, $I_E$=0, f=1MHz | | 2.0 | 3.0 | pF |
| Noise Figure | NF | $I_C$=-0.1mA, $V_{CE}$=-6V<br>$R_G$=10kΩ, f=100Hz | | 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

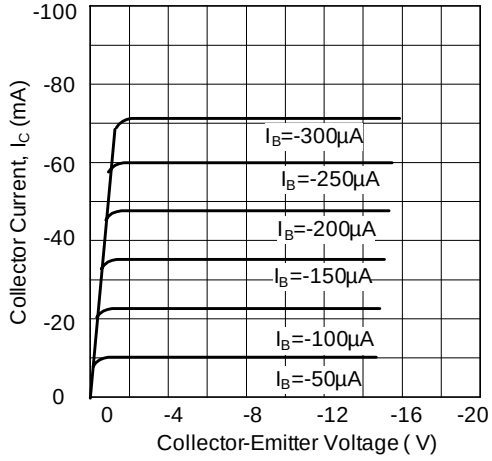



Fig.2 DC Current Gain

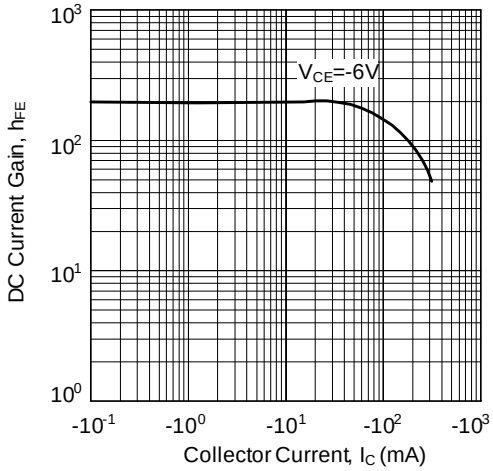



Fig.3 Base-Emitter on Voltage

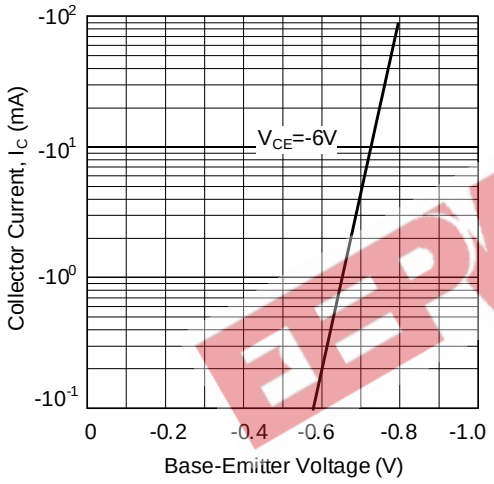



Fig.4 Saturation Voltage

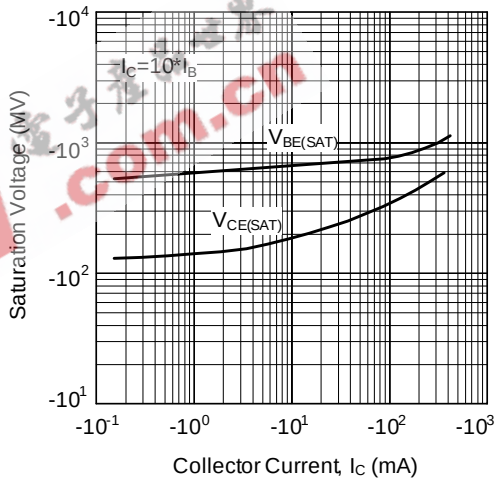



Fig.5 Current Gain-Bandwidth Product

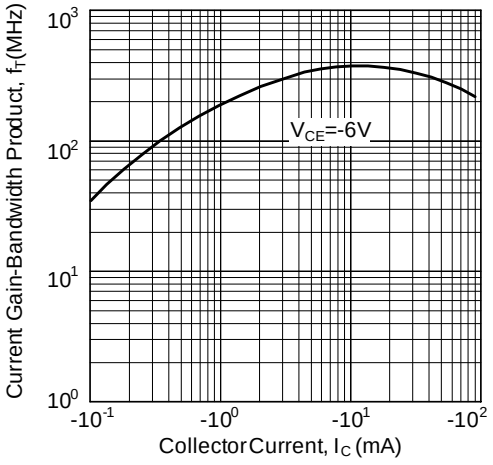



Fig.6 Collector Output Capacitance