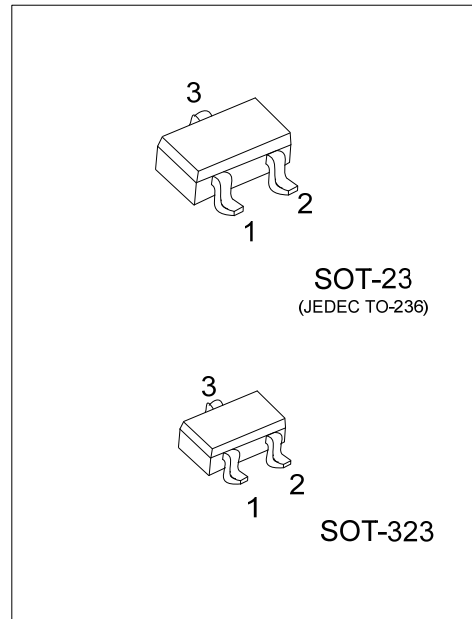




## 2SA1977

## PNP EPITAXIAL SILICON TRANSISTOR

POWER AMPLIFIER  
 APPLICATIONS DRIVER  
 STAGE AMPLIFIER  
 APPLICATIONS



### FEATURES

\* Complementary to UTC 2SC3356

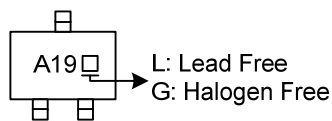
### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen-Free		1	2	3	
2SA1977L-xx-AE3-R	2SA1977G-xx-AE3-R	SOT-23	B	E	C	Tape Reel
2SA1977L-xx-AL3-R	2SA1977G-xx-AL3-R	SOT-323	B	E	C	Tape Reel

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

<p>2SA1977G-xx-AE3-R</p> <p>(1)Packing Type          (2)Package Type          (3)Rank          (4)G: Halogen Free</p>	<p>(1) R: Tape Reel          (2) AE3: SOT-23, AL3: SOT-323          (3) x: reference to Classification of <math>h_{FE}</math>          (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	-20	V
Collector-Emitter Voltage		$V_{CEO}$	-12	V
Emitter-Base Voltage		$V_{EBO}$	-3	V
Collector Current		$I_C$	-50	mA
Collector Power Dissipation	SOT-23	$P_C$	200	mW
	SOT-323		150	mW
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature Range		$T_{STG}$	-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 Cut-off Current		$I_{CBO}$	$V_{CB}=-10\text{V}, I_E=0$			-0.1	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB}=-1\text{V}, I_C=0$			-0.1	$\mu\text{A}$
Collector-Emitter Saturation Voltage	Normal	$V_{CE(SAT)}$	$I_C=-25\text{mA}, I_B=-2.5\text{mA}$			0.2	V
	Z1 Rank					0.4	V
DC Current Gain	Normal	$h_{FE}$	$V_{CE}=-8\text{V}, I_C=-20\text{mA}$	50		210	
	Z1 Rank			20		140	
Gain Bandwidth Product		$f_T$	$V_{CE}=-8\text{V}, I_C=-20\text{mA}, f=1\text{MHz}$	6.0	8.0		GHz
Collector Capacitance		$C_{re}$	$V_{CE}=-8\text{V}, I_C=-20\text{mA}, f=1\text{MHz}$		0.5	1.0	pF

Note: Measured by a 3-terminal bridge. Emitter and Case should be connected to the guard terminal.

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.