



BFR93A

NPN EPITAXIAL SILICON TRANSISTOR

ISC SILICON NPN RF TRANSISTOR

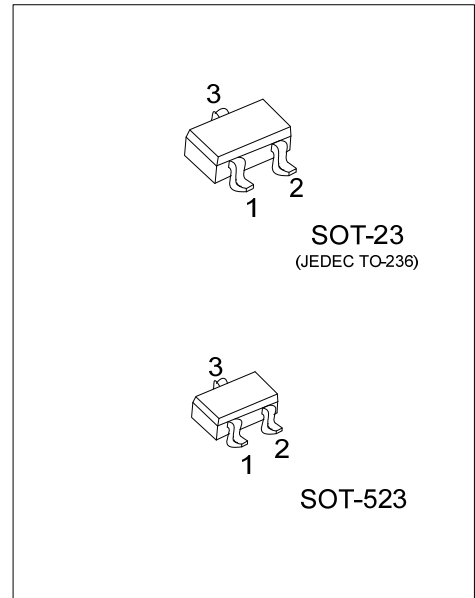
DESCRIPTION

The UTC **BFR93A** is an isc silicon NPN RF transistor, it uses UTC's advanced technology to provide customers with high power gain and low noise figure, etc.

The UTC **BFR93A** is designed for use in RF wideband amplifiers and oscillators.

FEATURES

- * High Power Gain
- * Low Noise Figure
- * High Current Gain Bandwidth Product



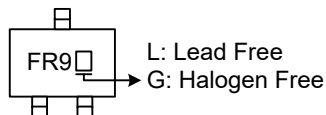
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BFR93AL-AE3-R	BFR93AG-AE3-R	SOT-23	B	E	C	Tape Reel
BFR93AL-AN3-R	BFR93AG-AN3-R	SOT-523	B	E	C	Tape Reel

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

<p>BFR93AG-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AN3: SOT-523</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
--------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------

MARKING



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

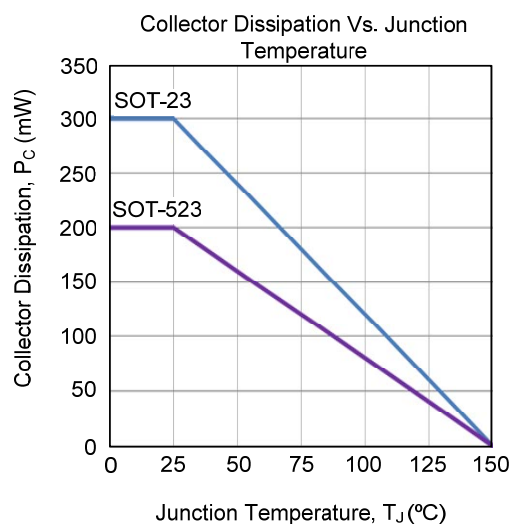
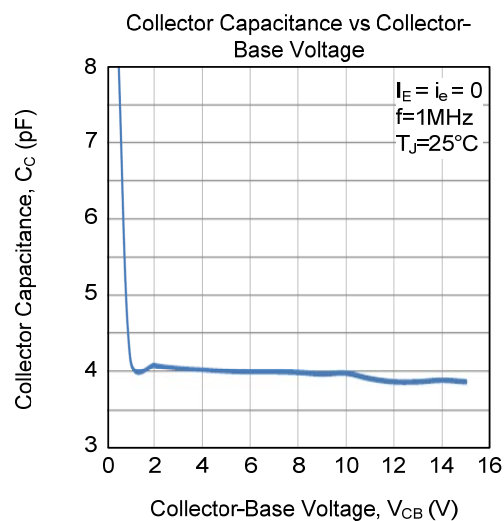
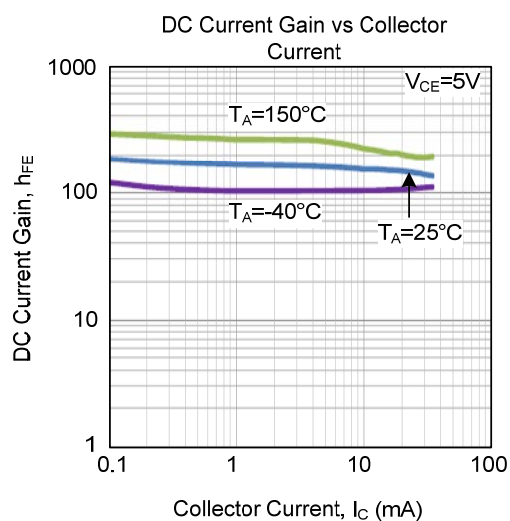
PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		V_{CBO}	15	V
Collector to Emitter Voltage		V_{CEO}	12	V
Emitter to Base Voltage		V_{EBO}	2	V
Collector Current Continuous		I_C	35	mA
Collector Power Dissipation ($T_C=25^{\circ}\text{C}$)	SOT-23	P_C	0.3	W
	SOT-523		0.2	W
Junction Temperature		T_J	+175	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-65 ~ +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 ($T_C=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cutoff Current	I_{CBO}	$V_{CB}=5\text{V}$, $I_E=0$			0.05	μA
DC Current Gain	h_{FE}	$I_C=30\text{mA}$, $V_{CE}=5\text{V}$	40			
Current Gain Bandwidth Product	f_T	$I_C=30\text{mA}$, $V_{CE}=5\text{V}$, $f=500\text{MHz}$	4.5	6		GHz
Feedback Frequency	C_{re}	$I_E=0$, $V_{CE}=5\text{V}$, $f=1\text{MHz}$		1.6		pF
Noise Figure	NF	$I_C=5\text{mA}$, $V_{CE}=8\text{V}$, $f=1.0\text{GHz}$			2.0	dB

■ TYPICAL CHARACTERISTICS



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.