

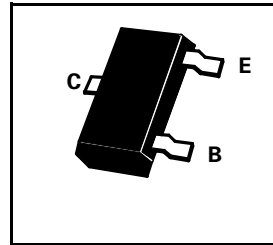
**SOT23 NPN SILICON PLANAR  
VHF/UHF TRANSISTOR**

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**BFQ31A**

**PARTMARKING DETAILS**

BFQ31A – S4  
BFQ31AR – S5



**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	15	V
Emitter-Base Voltage	$V_{EBO}$	3	V
Continuous Collector Current	$I_C$	100	mA
Base Current	$I_B$	50	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	330	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

**ELECTRICAL CHARACTERISTICS (at  $T_{amb} = 25^{\circ}C$ ).**

PARAMETER	SYMBOL	BFQ31A		UNIT	CONDITIONS.
		MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	30		V	$I_C=1.0\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	15		V	$I_C=3mA, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	3		V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	$I_{CBO}$		0.01	$\mu A$	$V_{CB}=15V, I_E=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.4	V	$I_C=10mA, I_B=1mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.0	V	$I_C=10mA, I_B=1mA$
Static Forward Current Transfer Ratio	$h_{FE}$	100			$I_C=3mA, V_{CE}=1V$
Transition Frequency	$f_T$	600		MHz	$I_C=4mA, V_{CE}=10V, f=100MHz$
Output Capacitance	$C_{obo}$		1.7	pF	$V_{CB}=10V, f=1MHz$
Input Capacitance	$C_{ibo}$		2.0	pF	$V_{CB}=0.5V, f=1MHz$
Noise Figure	N		6.0	dB	$I_C=1mA, V_{CE}=6V, R_s=400\Omega, f=60MHz$

\*Measured under pulsed conditions.  
Spice parameter data is available upon request for this device

