

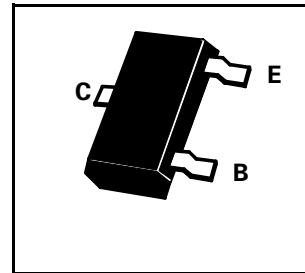
# SOT23 NPN SILICON PLANAR VHF/UHF TRANSISTOR

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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     | $I_C=4mA, V_{CE}=10V$<br>$f=100MHz$              |
| 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      | $I_C=1mA, V_{CE}=6V$<br>$R_s=400\Omega, f=60MHz$ |

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

