

Silicon NPN RF Transistor

BFR35AP

DESCRIPTION

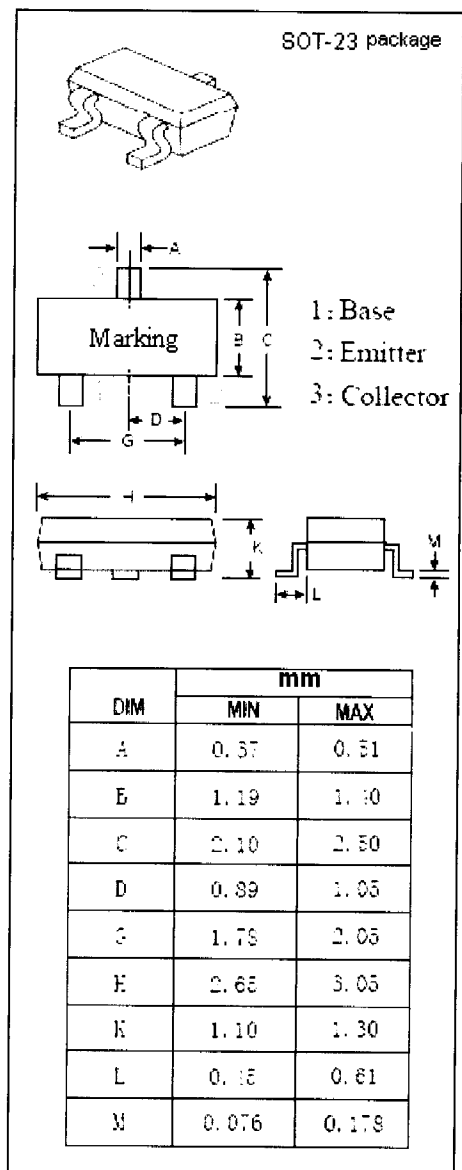
- Low Noise Figure
NF = 1.8 dB TYP. @V_{CE} = 6 V, I_C = 2 mA, f = 900 MHz
- High Gain
|S_{21e}|² = 12.5 dB TYP. @V_{CE} = 8 V, I_C = 15 mA, f = 900 MHz

APPLICATIONS

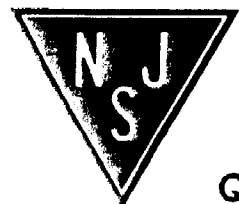
- Designed for low distortion broadband amplifiers and oscillators.

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

| SYMBOL | PARAMETER | VALUE | UNIT |
|------------------|--|---------|------|
| V _{CBO} | Collector-Base Voltage | 20 | V |
| V _{CEs} | Collector-Emitter Voltage | 20 | V |
| V _{CEO} | Collector-Emitter Voltage | 15 | V |
| V _{EBO} | Emitter-Base Voltage | 2.5 | V |
| I _C | Collector Current-Continuous | 30 | mA |
| I _B | Base Current-Continuous | 4 | mA |
| P _C | Collector Power Dissipation @T _C =25°C | 0.28 | W |
| T _J | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature Range | -65~150 | °C |



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ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|-------------------------------------|--|-----|------|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=1\text{mA}; I_B=0$ | 15 | | | V |
| I_{CES} | Collector Cutoff Current | $V_{CE}=20\text{V}; V_{BE}=0$ | | | 10 | μA |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=10\text{V}; I_E=0$ | | | 0.1 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=2.5\text{V}; I_C=0$ | | | 100 | μA |
| h_{FE} | DC Current Gain | $I_C=15\text{mA}; V_{CE}=8\text{V}$ | 40 | | 200 | |
| f_T | Current-Gain—Bandwidth Product | $I_C=15\text{mA}; V_{CE}=8\text{V}; f=500\text{MHz}$ | 3.5 | 5 | | GHz |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$ | | 0.38 | 0.6 | pF |
| PG | Power Gain | $I_C=15\text{mA}; V_{CE}=8\text{V}; f=900\text{MHz}$ | | 15 | | dB |
| PG | Power Gain | $I_C=15\text{mA}; V_{CE}=8\text{V}; f=1.8\text{GHz}$ | | 9.5 | | dB |
| $ S_{21e} ^2$ | Insertion Power Gain | $I_C=15\text{mA}; V_{CE}=8\text{V}; f=900\text{MHz}$ | | 12.5 | | dB |
| $ S_{21e} ^2$ | Insertion Power Gain | $I_C=15\text{mA}; V_{CE}=8\text{V}; f=1.8\text{GHz}$ | | 7 | | dB |
| NF | Noise Figure | $I_C=2\text{mA}; V_{CE}=6\text{V}; f=900\text{MHz}$ | | 1.8 | | dB |
| NF | Noise Figure | $I_C=2\text{mA}; V_{CE}=6\text{V}; f=1.8\text{GHz}$ | | 2.9 | | dB |