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# Silicon NPN RF Transistor — BFR93AW

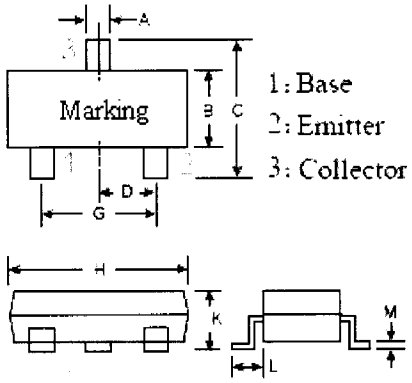
## DESCRIPTION

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

## APPLICATIONS

- Designed for use in RF amplifiers ,mixers and oscillators with signal frequencies up to 1 GHz.

SOT-323 package




| DIM | mm MIN | mm MAX |
|---|---|---|
| A | 0.30 | 0.40 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.10 |
| D | 0.65 | |
| H | 1.80 | 2.20 |
| K | 0.80 | 1.00 |
| M | 0.10 | 0.25 |

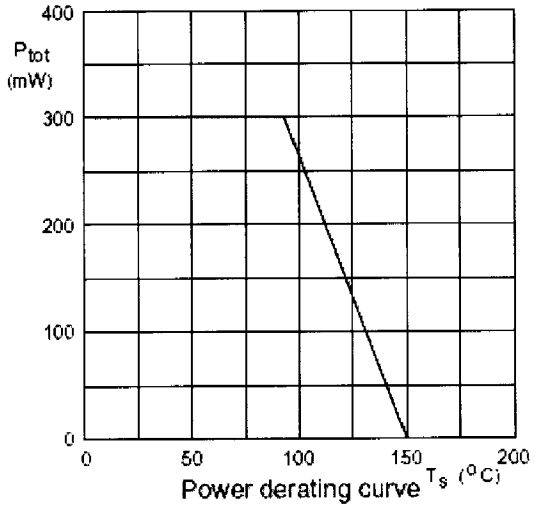
## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 15 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 12 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 2 | V |
| $I_C$ | Collector Current-Continuous | 35 | mA |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 0.3 | W |
| $T_J$ | Junction Temperature | 175 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~150 | ℃ |

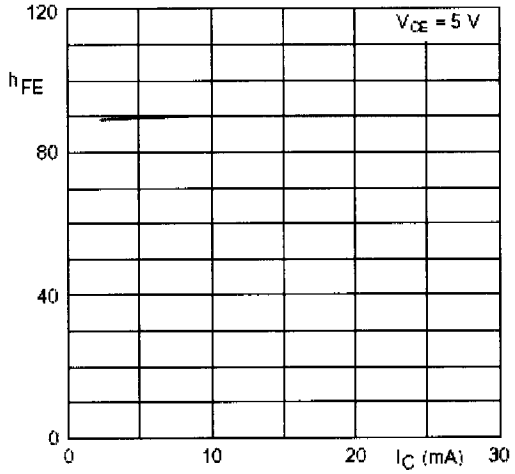
## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 5V; $I_E$= 0 | | | 0.05 | μA |
| $h_{FE}$ | DC Current Gain | $I_C$= 30mA ; $V_{CE}$= 5V | 40 | | | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 30mA ; $V_{CE}$= 5V; f= 500MHz | 4 | 5 | | GHz |
| $C_{OB}$ | Output Capacitance | $I_E$= 0 ; $V_{CB}$= 5V; f= 1MHz | | 0.7 | | pF |
| $C_{re}$ | Feedback Frequency | $I_E$= 0 ; $V_{CB}$= 5V; f= 1MHz | | 0.6 | | pF |
| NF | Noise Figure | $I_C$= 5mA ; $V_{CE}$= 8V; f= 1GHz | | 1.5 | | dB |
| NF | Noise Figure | $I_C$= 5mA ; $V_{CE}$= 8V; f= 2GHz | | 2.1 | | dB |




Power derating curve




DC current gain as a function of collector current; typical values