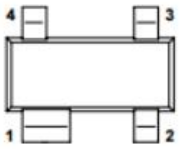
# isc Silicon NPN RF Transistor BFG520/X

## DESCRIPTION

- Low Noise Figure
  NF = 1.3 dB TYP. @$V_{CE}$ = 8 V, $I_C$ = 10 mA, f = 900 MHz
- High Gain
  $|S_{21}|^2$=16dB TYP. @$V_{CE}$= 8 V,$I_C$ = 40 mA,f = 900 MHz
- Minimum Lot-to-Lot variations for robust device performance and reliable operation




SOT143B package

1. Collector
2. Emitter
3. Base
4. Emitter

## APPLICATIONS

- Designed for use in low noise ,high-gain amplifiers and linear broadband amplifiers.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 20 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 15 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 2.5 | V |
| $I_C$ | Collector Current-Continuous | 70 | mA |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 0.3 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~150 | ℃ |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 1mA ; $I_B$= 0 | 15 | | | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 8V; $I_E$= 0 | | | 0.05 | μA |
| $h_{FE}$ | DC Current Gain | $I_C$=20mA ; $V_{CE}$= 6V | 60 | | 250 | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 20mA ; $V_{CE}$= 6V; f= 1MHz | | 9 | | GHz |
| Cre | Feedback Capacitance | $I_E$= 0 ; $V_{CB}$= 6V; f= 1MHz | | 0.3 | | pF |
| Ce | Emitter capacitance | IC=iC=0,$V_{EB}$=0.5V,f=1MHz | | 1.0 | | pF |
| Cc | Collector capacitance | IE=ie=0,$V_{CB}$=6V,f=1MHz | | 0.6 | | pF |
| $\|S_{21}\|^2$ | Insertion Power Gain | $I_C$= 40mA ; $V_{CE}$= 8V; f= 900MHz | 17 | 18 | | dB |
| NF | Noise Figure | $I_C$= 5mA ; $V_{CE}$= 6V; f= 900MHz | | 1.1 | 1.6 | dB |
| | | $I_C$= 20mA ; $V_{CE}$= 6V; f= 900MHz | | 1.6 | 2.1 | |
| | | $I_C$= 5mA ; $V_{CE}$= 8V; f= 2GHz | | 1.9 | | |

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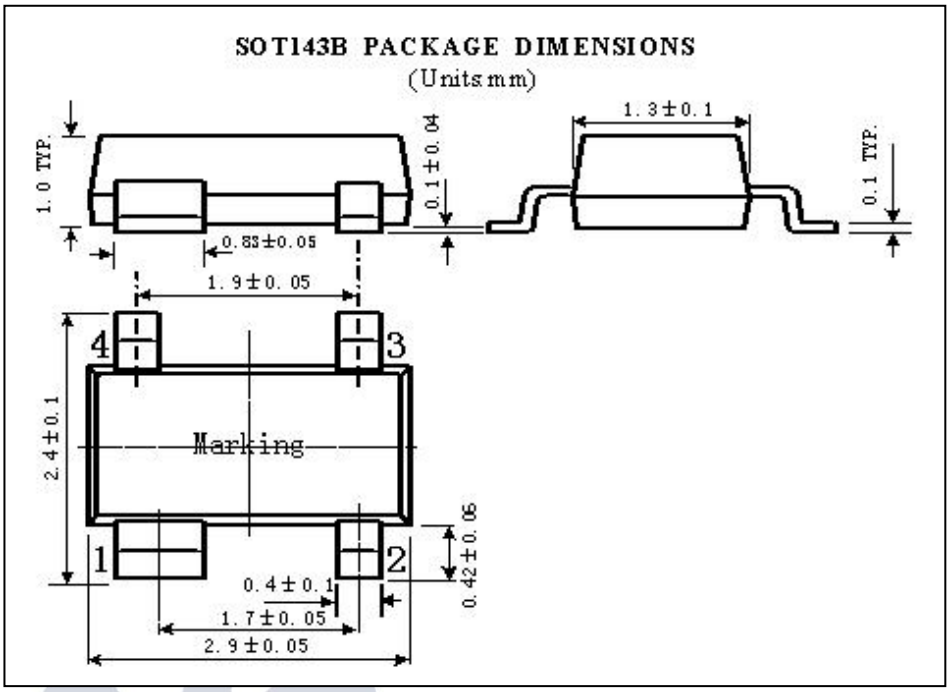
**PACKAGE SIZE DRAWING**

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