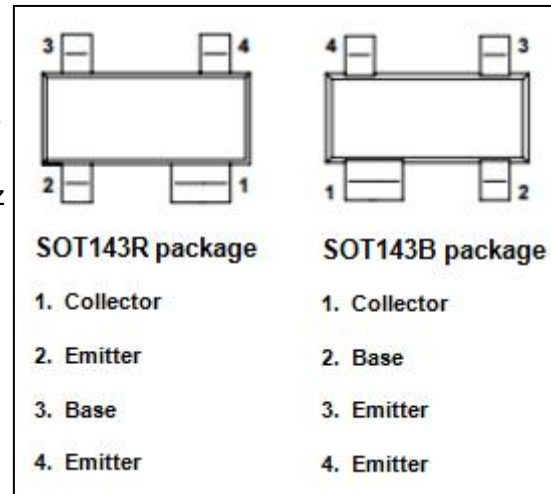


**isc Silicon NPN RF Transistor**
**BFG520**
**DESCRIPTION**

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

**APPLICATIONS**

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


**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

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 @ $T_c=25^\circ\text{C}$	0.3	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

## isc Silicon NPN RF Transistor

## BFG520

## ELECTRICAL CHARACTERISTICS

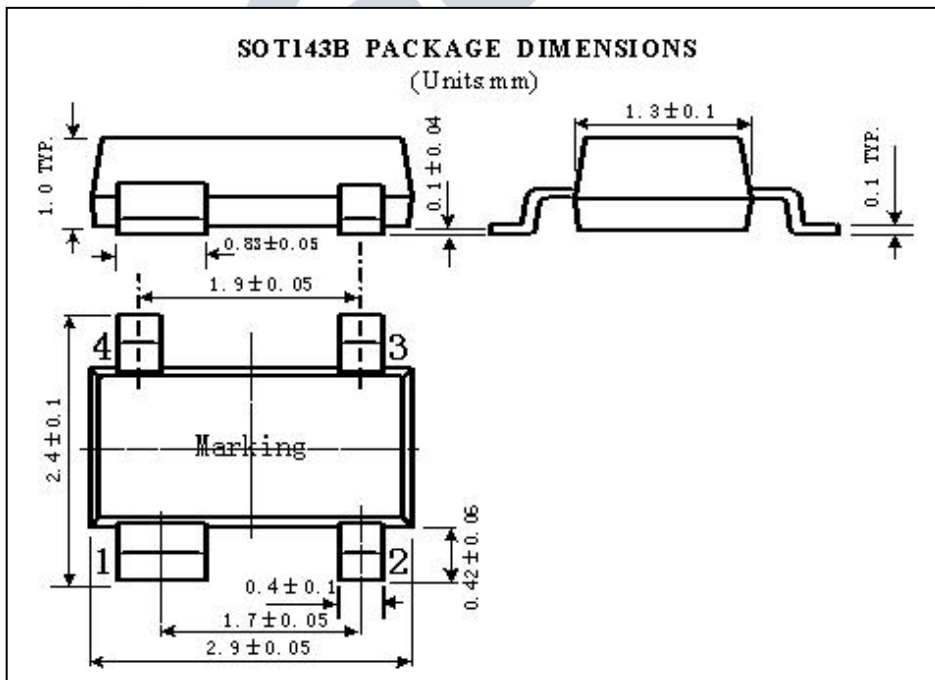
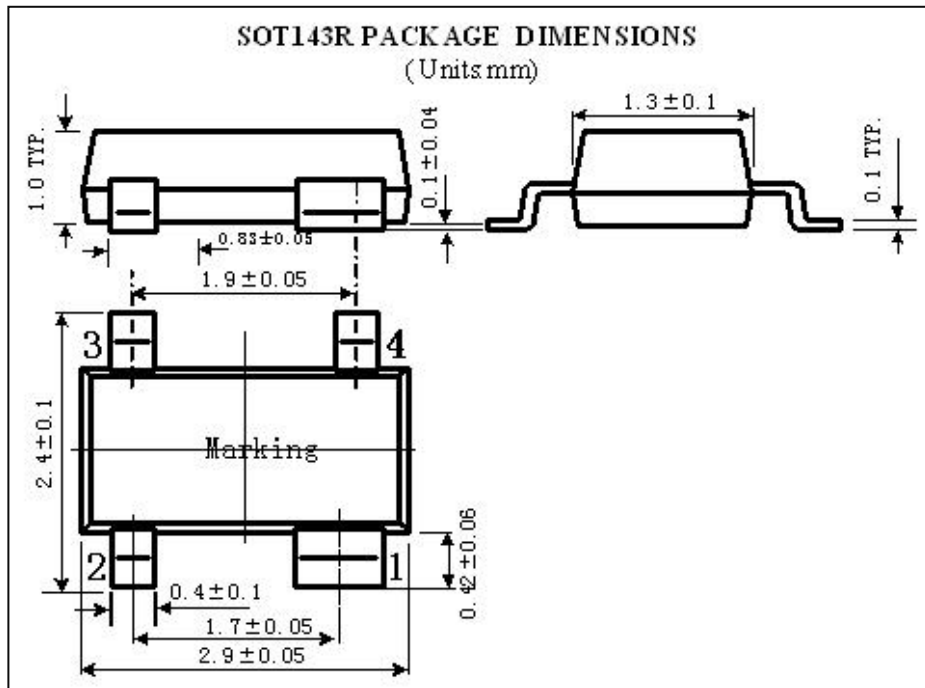
T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 1mA ; I <sub>B</sub> = 0	15			V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 8V; I <sub>E</sub> = 0			0.05	μ A
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> =20mA ; V <sub>CE</sub> = 6V	60		250	
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 20mA ; V <sub>CE</sub> = 6V; f= 1MHz		9		GHz
C <sub>re</sub>	Feedback Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 6V; f= 1MHz		0.3		pF
C <sub>e</sub>	Emitter capacitance	I <sub>C</sub> =i <sub>C</sub> =0, V <sub>EB</sub> =0.5V, f=1MHz		1.0		pF
C <sub>c</sub>	Collector capacitance	I <sub>E</sub> =i <sub>e</sub> =0, V <sub>CB</sub> =6V, f=1MHz		0.6		pF
S <sub>21</sub>   <sup>2</sup>	Insertion Power Gain	I <sub>C</sub> = 40mA ; V <sub>CE</sub> = 8V; f= 900MHz	17	18		dB
NF	Noise Figure	I <sub>C</sub> = 5mA ; V <sub>CE</sub> = 6V; f= 900MHz		1.1	1.6	dB
		I <sub>C</sub> = 20mA ; V <sub>CE</sub> = 6V; f= 900MHz		1.6	2.1	
		I <sub>C</sub> = 5mA ; V <sub>CE</sub> = 8V; f= 2GHz		1.9		

**isc Silicon NPN RF Transistor**

**BFG520**

**PACKAGE SIZE DRAWING**



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