

**Silicon NPN RF Transistor**

**BFR520**

**DESCRIPTION**

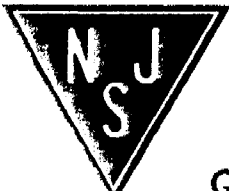
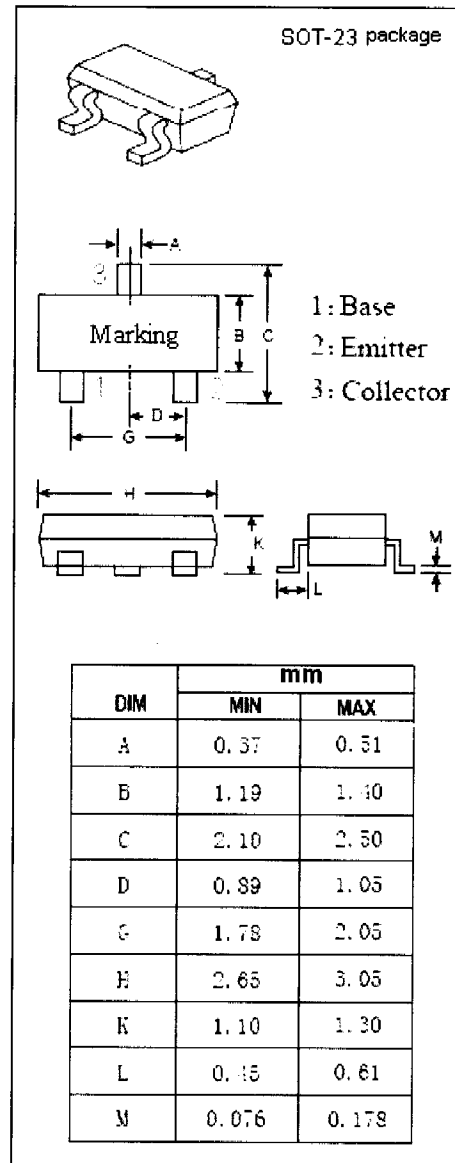
- High Power Gain
- High Current Gain Bandwidth Product
- Low Noise Figure

**APPLICATIONS**

- Designed for RF frontend in wideband applications in the GHz range, such as analog and digital cellular telephones, cordless.

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	20	V
V <sub>CES</sub>	Collector-Emitter Voltage	15	V
V <sub>EBO</sub>	Emitter-Base Voltage	2.5	V
I <sub>C</sub>	Collector Current-Continuous	70	mA
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	0.3	W
T <sub>J</sub>	Junction Temperature	175	°C
T <sub>stg</sub>	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
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=6\text{V}; I_E=0$			0.05	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=20\text{mA}; V_{CE}=6\text{V}$	60		250	
$f_T$	Current-Gain—Bandwidth Product	$I_C=20\text{mA}; V_{CE}=6\text{V}; f=1\text{GHz}$		9		GHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=6\text{V}; f=1\text{MHz}$		0.5		pF
PG	Power Gain	$I_C=20\text{mA}; V_{CE}=6\text{V}; f=900\text{MHz}$		15		dB
PG	Power Gain	$I_C=20\text{mA}; V_{CE}=6\text{V}; f=2\text{GHz}$		9		dB
$ S_{21e} ^2$	Insertion Power Gain	$I_C=20\text{mA}; V_{CE}=6\text{V}; f=900\text{MHz}$	13	14		dB
NF	Noise Figure	$I_C=5\text{mA}; V_{CE}=6\text{V}; f=900\text{MHz}$		1.1	1.6	dB
NF	Noise Figure	$I_C=20\text{mA}; V_{CE}=6\text{V}; f=900\text{MHz}$		1.6	2.1	dB

