

isc Silicon NPN RF Transistor

BFR106

DESCRIPTION

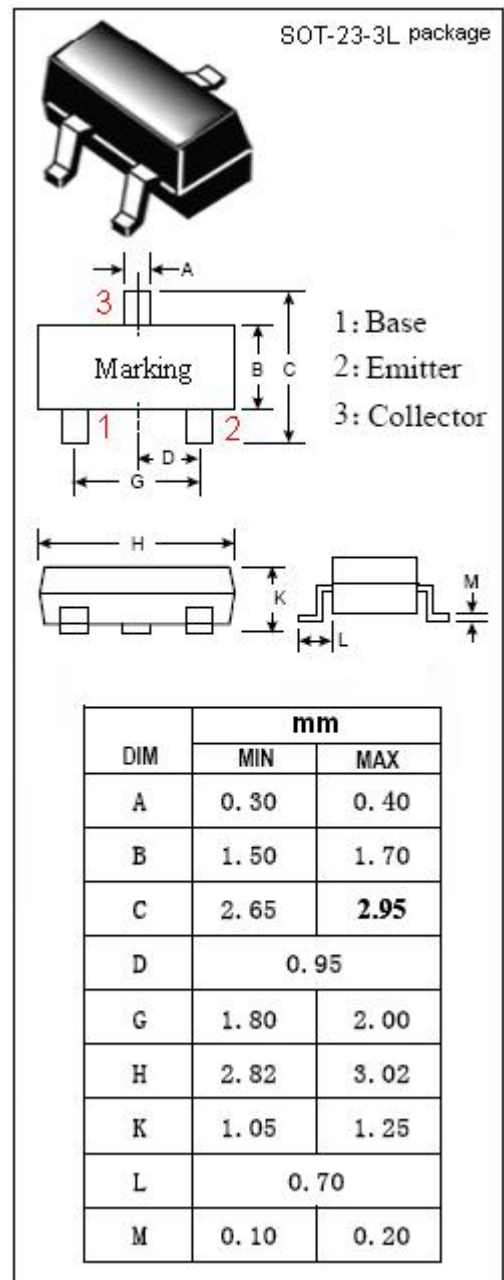
- Low Noise Figure
NF = 2.5 dB TYP. @ $V_{CE} = 8\text{ V}$, $I_C = 20\text{ mA}$, $f = 900\text{ MHz}$
- High Gain
 $|S_{21e}|^2 = 10.5\text{ dB TYP. @}$ $V_{CE} = 8\text{ V}$, $I_C = 70\text{ mA}$, $f = 900\text{ MHz}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

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_{CES}	Collector-Emitter Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current-Continuous	100	mA
I_B	Base Current-Continuous	12	mA
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	0.5	W
T_J	Junction Temperature	175	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C 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 _{CES}	Collector Cutoff Current	V _{CE} = 20V; V _{BE} = 0			100	μ A
I _{CBO}	Collector Cutoff Current	V _{CB} = 10V; I _E = 0			0.1	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 2V; I _C = 0			10	μ A
h _{FE}	DC Current Gain	I _C = 70mA ; V _{CE} = 8V	40		220	
f _T	Current-Gain—Bandwidth Product	I _C = 70mA ; V _{CE} = 8V; f= 500MHz	3.5	5		GHz
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V; f= 1MHz		0.95	1.5	pF
PG	Power Gain	I _C = 70mA ; V _{CE} = 8V; f= 900MHz		12.5		dB
PG	Power Gain	I _C = 70mA ; V _{CE} = 8V; f= 1.8GHz		7.5		dB
S _{21e} ²	Insertion Power Gain	I _C = 70mA ; V _{CE} = 8V; f= 900MHz		10.5		dB
S _{21e} ²	Insertion Power Gain	I _C = 70mA ; V _{CE} = 8V; f= 1.8GHz		5		dB
NF	Noise Figure	I _C = 20mA ; V _{CE} = 8V; f= 900MHz		2.5		dB
NF	Noise Figure	I _C = 20mA ; V _{CE} = 8V; f= 1.8GHz		4		dB

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