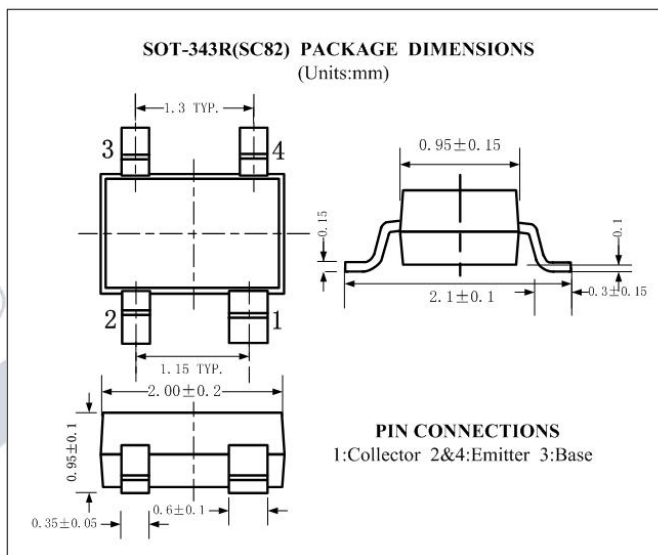


**DESCRIPTION**

- Low Noise Figure  
NF = 1.3 dB TYP.  
@ $V_{CE} = 6\text{ V}$ ,  $I_C = 5\text{ mA}$ ,  $f = 1\text{ GHz}$
- High Gain  
 $|S_{21}|^2 = 18\text{ dB TYP.}$   
@ $V_{CE} = 6\text{ V}$ ,  $I_C = 30\text{ mA}$ ,  $f = 1\text{ GHz}$
- 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	12	V
$V_{EBO}$	Emitter-Base Voltage	2	V
$I_C$	Collector Current-Continuous	100	mA
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	700	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

**isc Silicon NPN RF Transistor**
**BFP196W**
**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	12			V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 10V ; I <sub>E</sub> = 0			100	nA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 30mA ; V <sub>CE</sub> = 6V	50	100	250	
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 30mA ; V <sub>CE</sub> = 8V	8.5	9		GHz
C <sub>re</sub>	Feedback Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 6V ; f= 1MHz		0.4		pF
C <sub>e</sub>	Emitter capacitance	I <sub>C</sub> =i <sub>C</sub> =0; V <sub>EB</sub> =0.5V; f=1MHz		1.5		pF
C <sub>c</sub>	Collector capacitance	I <sub>E</sub> =i <sub>e</sub> =0; V <sub>CB</sub> =8V; f=1MHz		0.6		pF
S <sub>21</sub>   <sup>2</sup>	Insertion Power Gain	I <sub>C</sub> = 30mA ; V <sub>CE</sub> = 6V; f= 1GHz	17	18		dB
NF	Noise Figure	I <sub>C</sub> = 5mA ; V <sub>CE</sub> = 6V; f= 1GHz		1.3		dB
		I <sub>C</sub> = 5mA ; V <sub>CE</sub> = 6V; f= 2GHz		2.0		

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