

**DESCRIPTION**

The PBR951 is an NPN silicon epitaxial transistor designed for low noise amplifier at VHF, UHF and CATV band.

It has dynamic range and good current characteristic.

MARKING:W2W

**FEATURES**

- Low Noise and High Gain  
 $NF = 1.1 \text{ dB TYP.}, G_a = 11 \text{ dB TYP. @} V_{CE} = 10 \text{ V}, I_c = 7 \text{ mA}, f = 1.0 \text{ GHz}$
- High Power Gain  
 $MAG = 13 \text{ dB TYP. @} V_{CE} = 10 \text{ V}, I_c = 20 \text{ mA}, f = 1.0 \text{ GHz}$

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

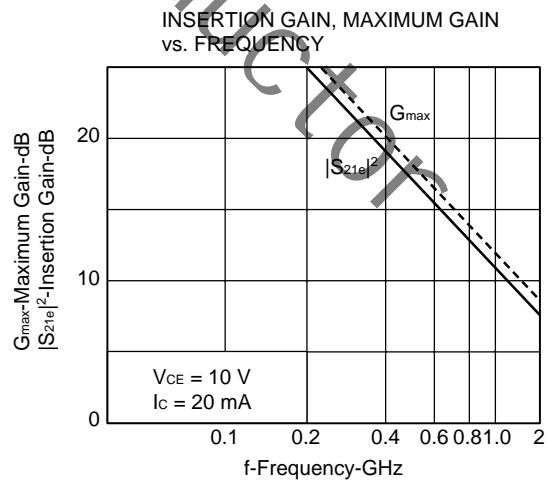
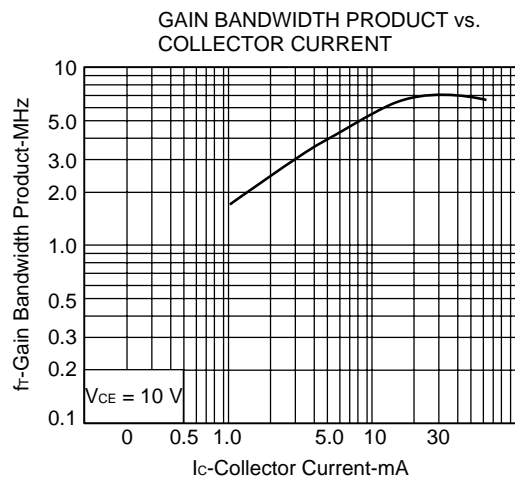
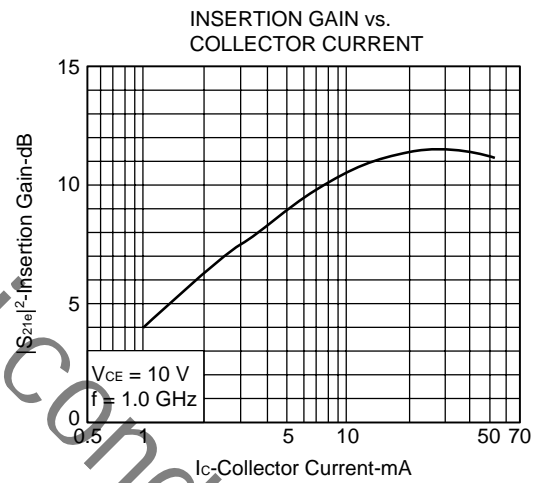
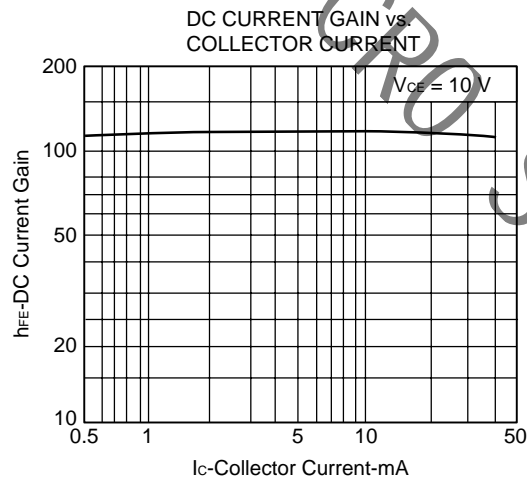
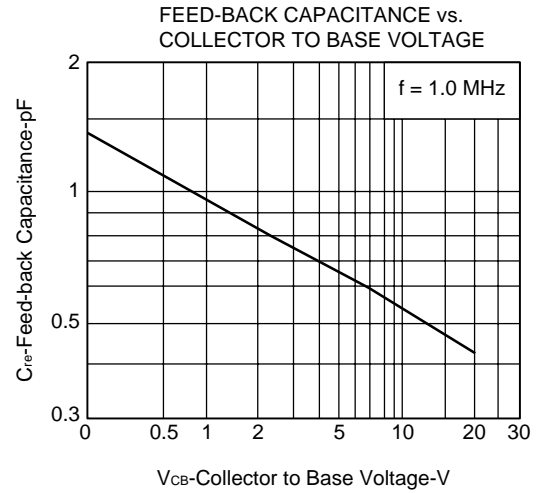
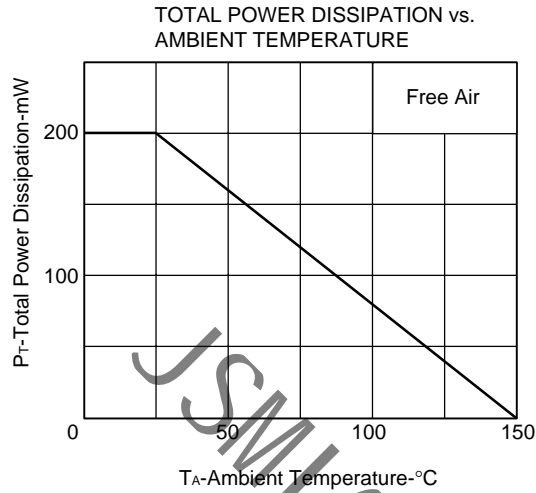
Collector to Base Voltage	V <sub>CB0</sub>	20	V
Collector to Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter to Base Voltage	V <sub>EB0</sub>	3.0	V
Collector Current	I <sub>c</sub>	100	mA
Total Power Dissipation	P <sub>T</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-65 to +150	°C

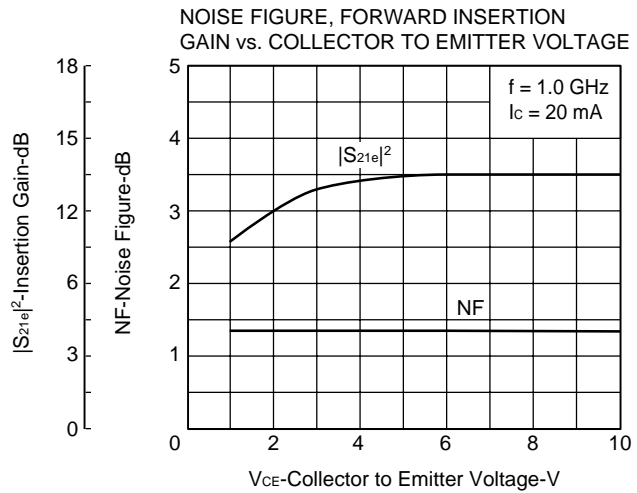
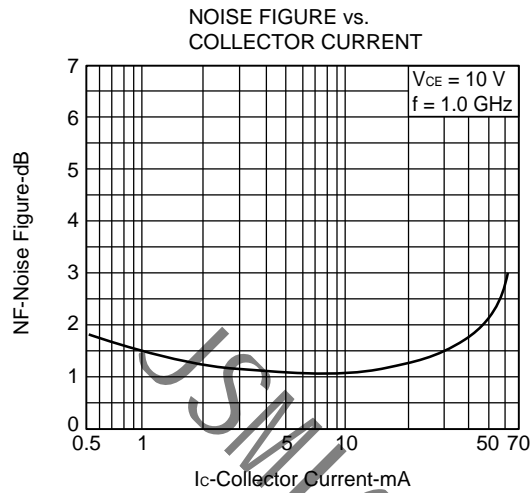
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I <sub>cBO</sub>			1.0	μA	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0
Emitter Cutoff Current	I <sub>EBO</sub>			1.0	μA	V <sub>EB</sub> = 1.0 V, I <sub>c</sub> = 0
DC Current Gain	h <sub>FE</sub> *	50	120	300		V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA
Gain Bandwidth Product	f <sub>T</sub>		7		GHz	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA
Feed-Back Capacitance	C <sub>re</sub> **		0.55	1.0	pF	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1.0 MHz
Insertion Power Gain	S <sub>21e</sub>   <sup>2</sup>		11.5		dB	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 20 mA, f = 1.0 GHz
Noise Figure	NF		1.1	2.0	dB	V <sub>CE</sub> = 10 V, I <sub>c</sub> = 7 mA, f = 1.0 GHz

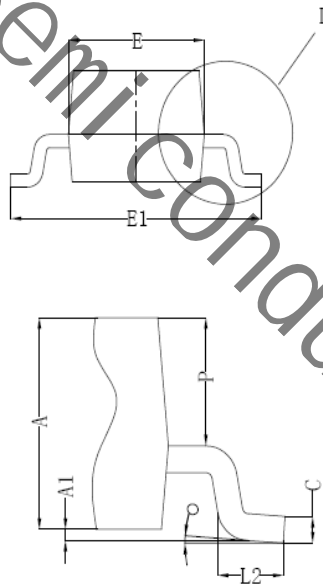
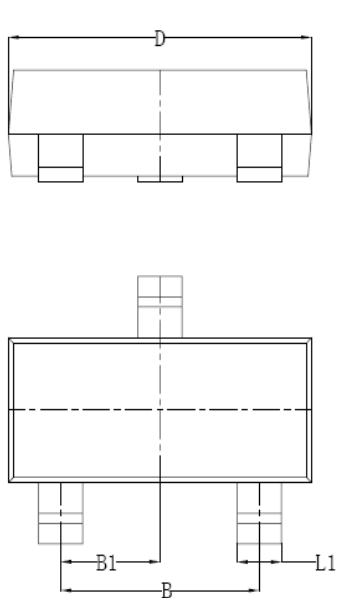
\* Pulse Measurement PW ≤ 350 μs, Duty Cycle ≤ 2 %

\*\* The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

**TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**




SOT23 Package outline



Symbol	Dim in mm		
	Min	Nor	Max
A	0.900	1.000	1.100
A1	0.000	0.050	0.100
L1	0.350	0.400	0.500
C	0.100	0.110	0.120
D	2.800	2.900	3.000
E	1.250	1.300	1.350
E1	2.250	2.400	2.550
B	1.800	1.900	2.000
B1	0.950 TYP		
L2	0.200	0.350	0.450
P	0.550	0.575	0.600

Detail L

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