

**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 ( $T_A = 25 \text{ }^\circ\text{C}$ )**

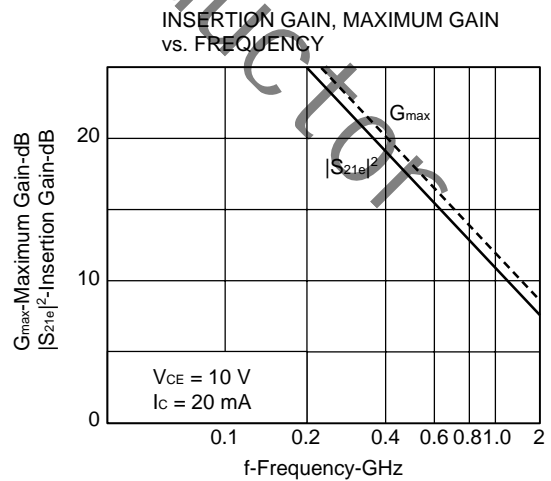
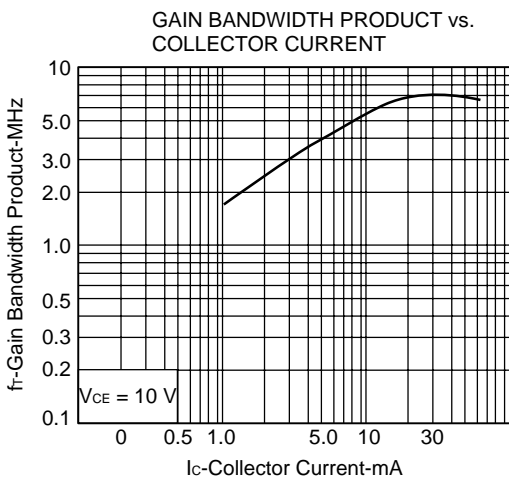
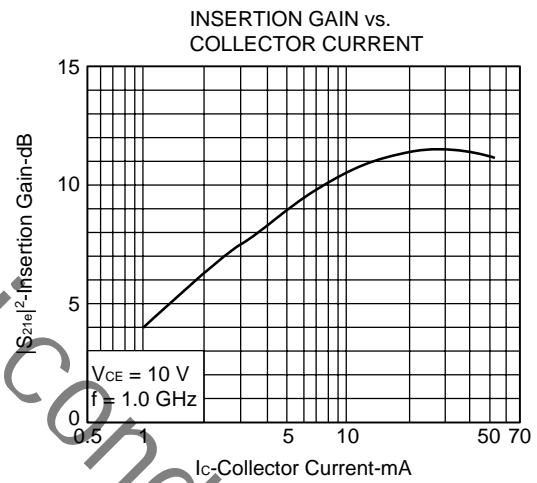
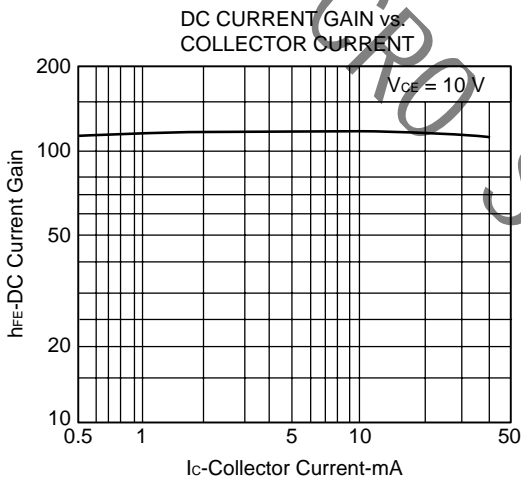
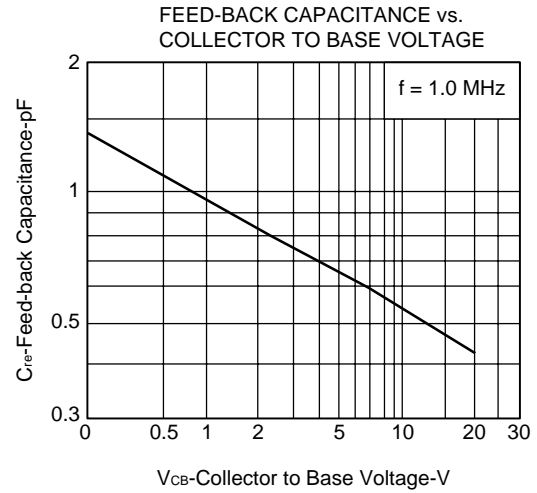
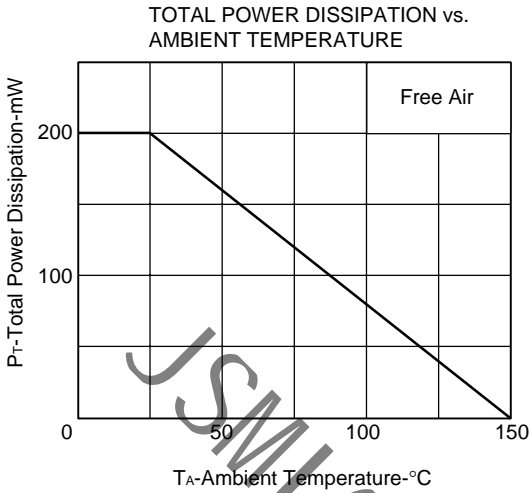
Collector to Base Voltage	$V_{CB0}$	20	V
Collector to Emitter Voltage	$V_{CE0}$	12	V
Emitter to Base Voltage	$V_{EB0}$	3.0	V
Collector Current	$I_c$	100	mA
Total Power Dissipation	$P_T$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$

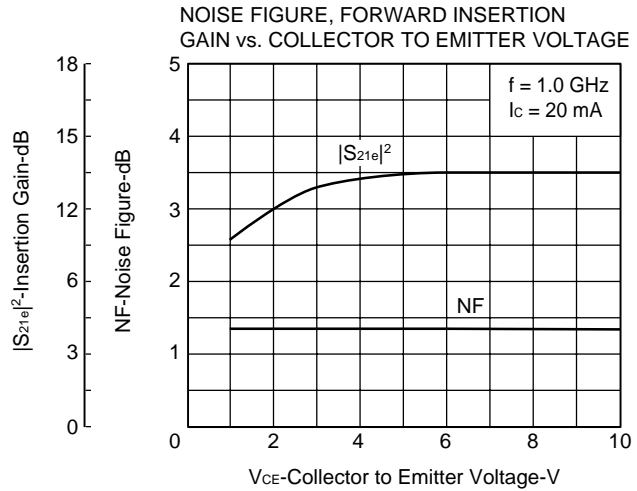
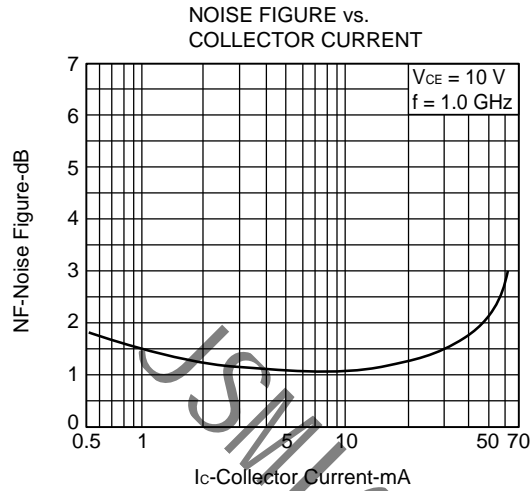
**ELECTRICAL CHARACTERISTICS ( $T_A = 25 \text{ }^\circ\text{C}$ )**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CB0}$			1.0	$\mu\text{A}$	$V_{CB} = 10 \text{ V}, I_E = 0$
Emitter Cutoff Current	$I_{EB0}$			1.0	$\mu\text{A}$	$V_{EB} = 1.0 \text{ V}, I_c = 0$
DC Current Gain	$h_{FE}^*$	50	120	300		$V_{CE} = 10 \text{ V}, I_c = 20 \text{ mA}$
Gain Bandwidth Product	$f_T$		7		GHz	$V_{CE} = 10 \text{ V}, I_c = 20 \text{ mA}$
Feed-Back Capacitance	$C_{re}^{**}$		0.55	1.0	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$
Insertion Power Gain	$ S_{21e} ^2$		11.5		dB	$V_{CE} = 10 \text{ V}, I_c = 20 \text{ mA}, f = 1.0 \text{ GHz}$
Noise Figure	NF		1.1	2.0	dB	$V_{CE} = 10 \text{ V}, I_c = 7 \text{ mA}, f = 1.0 \text{ GHz}$

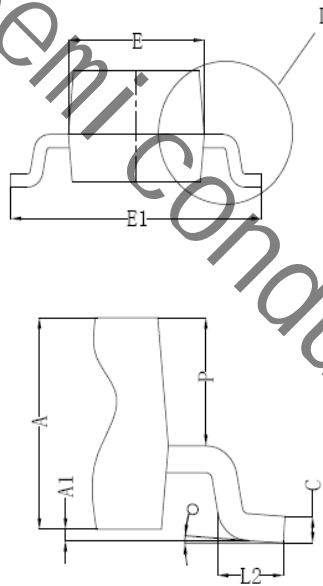
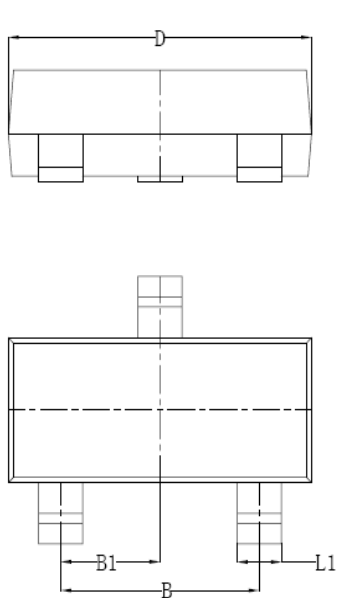
\* Pulse Measurement  $PW \leq 350 \mu\text{s}$ , Duty Cycle  $\leq 2 \%$

\*\* 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