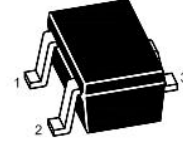




**NPN Silicon Epitaxial Planar Transistor**

for microwave low noise amplifier at VHF, UHF and CATV band



The transistor is subdivided into three groups, Q, R and S, according to its DC current gain.

1.Base 2.Emitter 3.Collector  
SOT-323 Plastic Package

HFE	MARKING
Q	R23
R	R24
S	R25

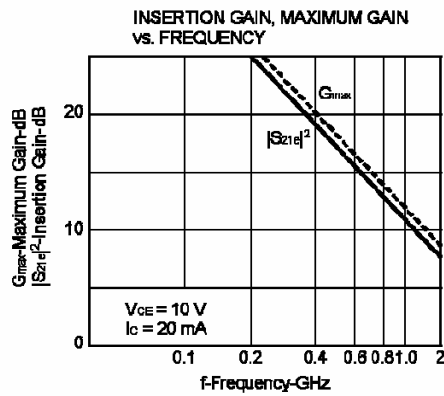
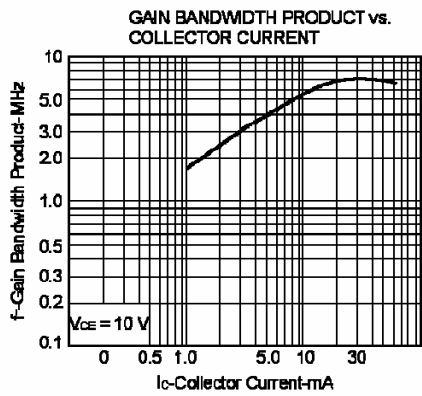
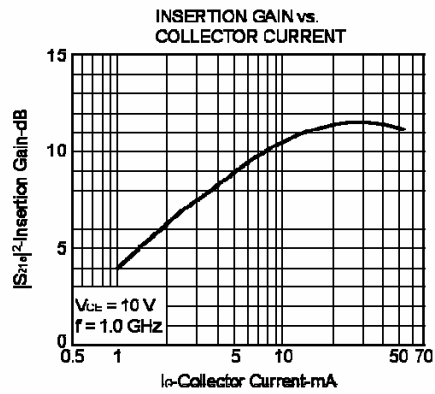
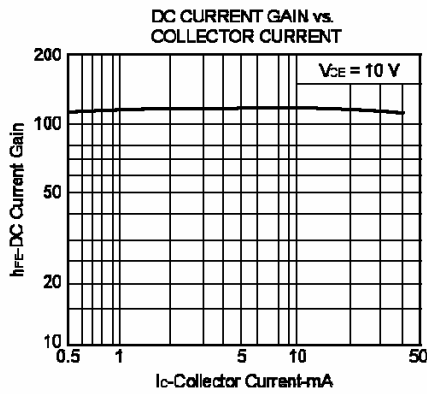
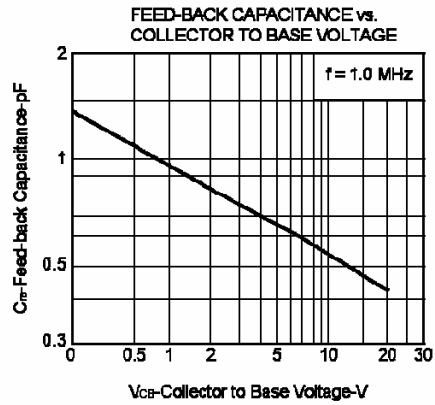
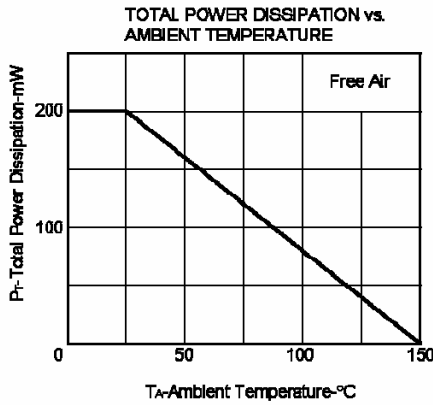
**Absolute Maximum Ratings (T<sub>a</sub> = 25 °C)**

Parameter	Symbol	Value	Unit
Collector Base Voltage	V <sub>CBO</sub>	20	V
Collector Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter Base Voltage	V <sub>EBO</sub>	3	V
Collector Current	I <sub>C</sub>	100	mA
Power Dissipation	P <sub>tot</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>s</sub>	- 65 to + 150	°C

**Characteristics (T<sub>a</sub> = 25 °C)**

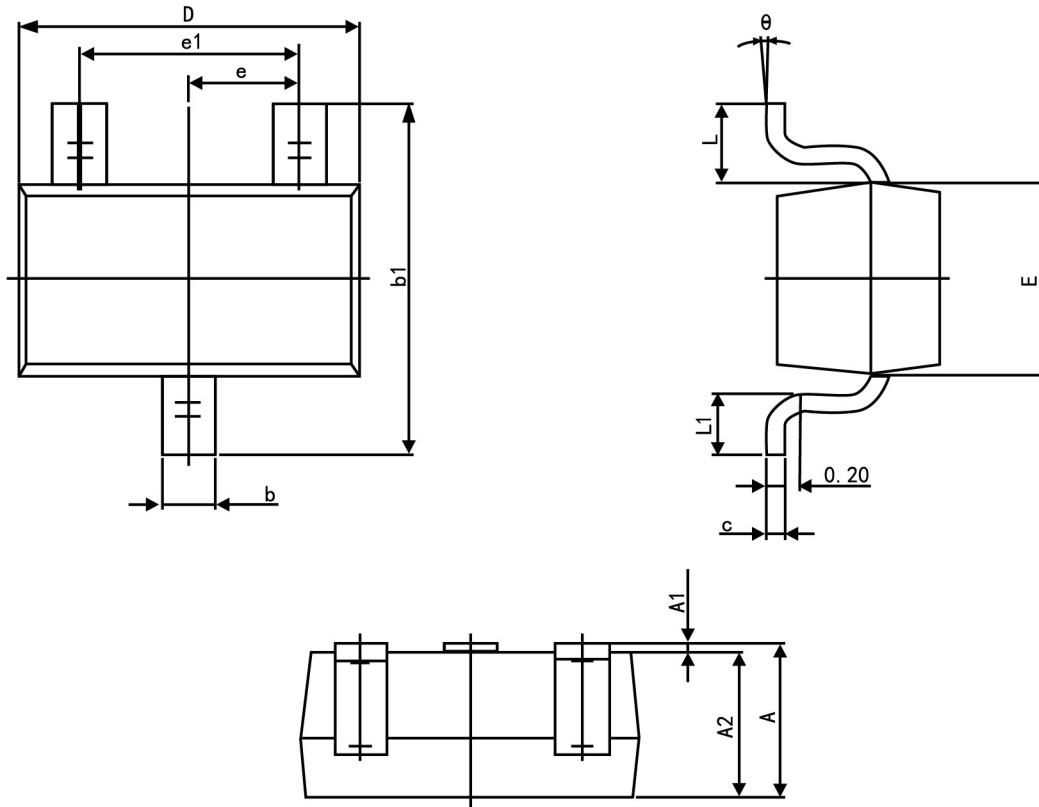
Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at V <sub>CE</sub> = 10 V, I <sub>C</sub> = 20 mA Current Gain Group	Q	h <sub>FE</sub>	50	-	100	-
	R	h <sub>FE</sub>	80	-	160	-
	S	h <sub>FE</sub>	125	-	250	-
Collector Cutoff Current at V <sub>CB</sub> = 10 V	I <sub>CBO</sub>	-	-	1	μA	
Emitter Cutoff Current at V <sub>EB</sub> = 1 V	I <sub>EBO</sub>	-	-	1	μA	
Gain Bandwidth Product at V <sub>CE</sub> = 10 V, I <sub>C</sub> = 20 mA	f <sub>T</sub>	-	3	-	GHz	
Feed-Back Capacitance at V <sub>CB</sub> = 10 V, f = 1 MHz	C <sub>re</sub> <sup>1)</sup>	-	0.55	1	pF	
Noise Figure at V <sub>CE</sub> = 10 V, I <sub>C</sub> = 7 mA, f = 1 GHz	NF	-	1.1	2	dB	

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





## SOT-323 Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°