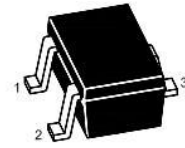


NPN Silicon Epitaxial Planar Transistor

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

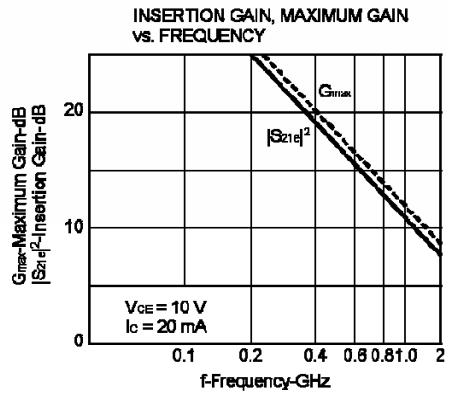
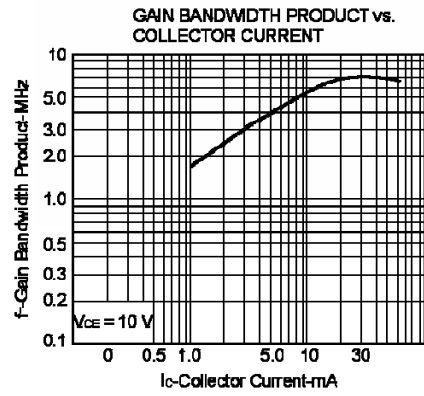
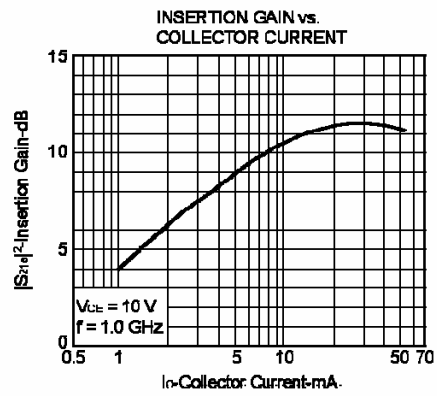
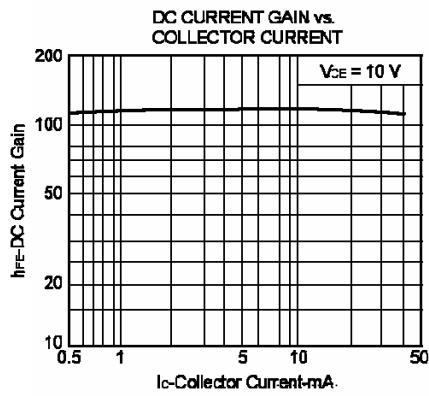
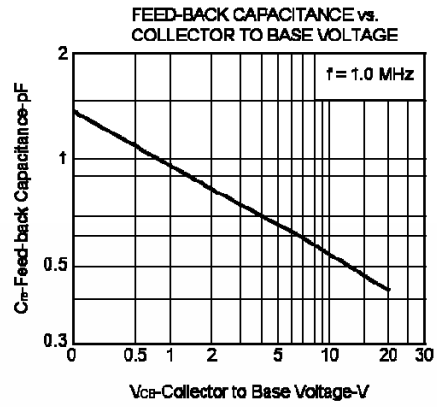
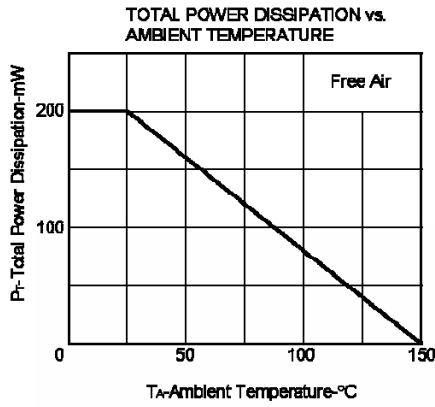
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V _{CBO}	20	V
Collector Emitter Voltage	V _{CEO}	12	V
Emitter Base Voltage	V _{EBO}	3	V
Collector Current	I _C	100	mA
Power Dissipation	P _{tot}	200	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	- 65 to + 150	°C

Characteristics (T_a = 25 °C)

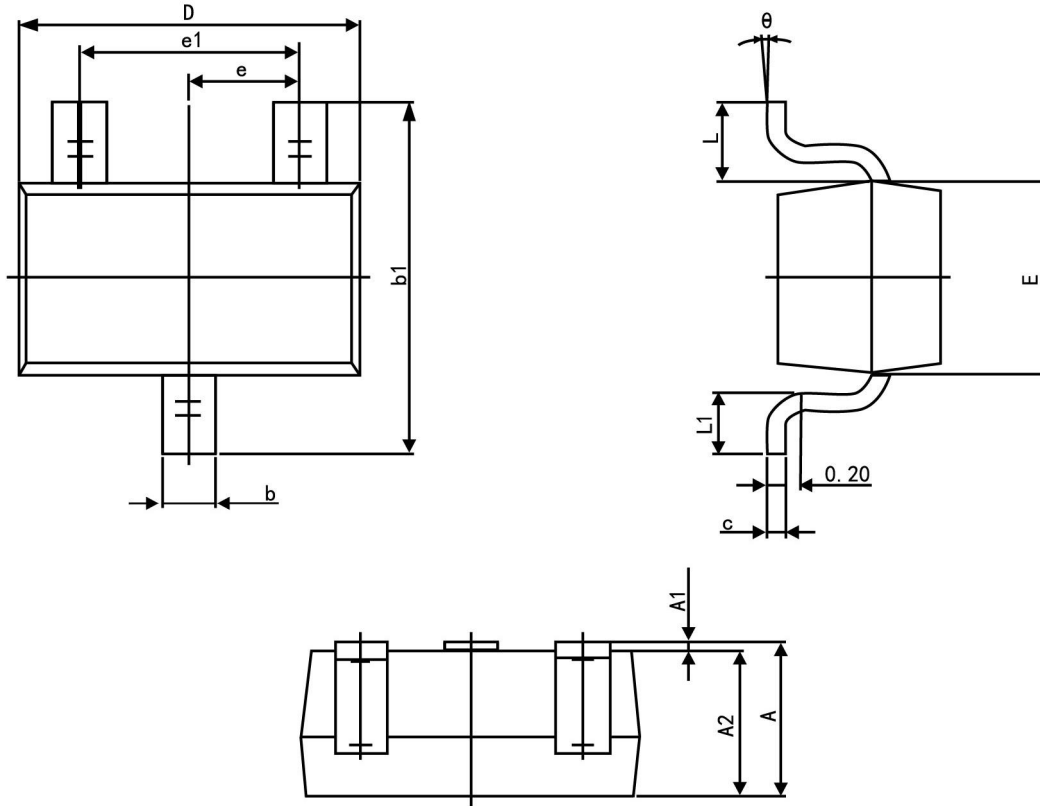
Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at V _{CE} = 10 V, I _C = 20 mA Current Gain Group	Q	h _{FE}	50	-	100	-
	R	h _{FE}	80	-	160	-
	S	h _{FE}	125	-	250	-
Collector Cutoff Current at V _{CB} = 10 V	I _{CBO}	-	-	1	μA	
Emitter Cutoff Current at V _{EB} = 1 V	I _{EBO}	-	-	1	μA	
Gain Bandwidth Product at V _{CE} = 10 V, I _C = 20 mA	f _T	-	7	-	GHz	
Feed-Back Capacitance at V _{CB} = 10 V, f = 1 MHz	C _{re} ¹⁾	-	0.55	1	pF	
Noise Figure at V _{CE} = 10 V, I _C = 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.



Package Outline

SOT-323



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°

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-323	Tape/Reel, 7" reel	3000	EIA-481-1