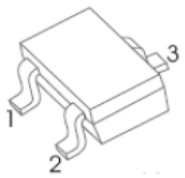
NPN Silicon Epitaxial Planar

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.

SOT-323



1. BASE
2. EMITTER
3. COLLECTOR

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)

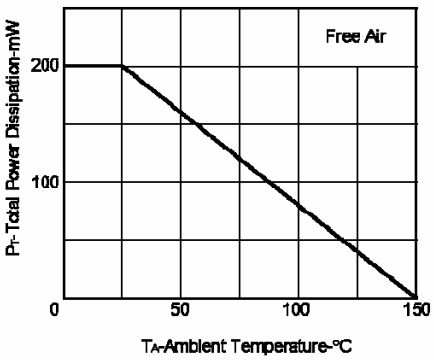
Parameter			Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 10 V, I_C = 20 mA	Current Gain Group	Q	h_{FE}	50	-	100	-
		R	h_{FE}	80	-	160	-
		S	h_{FE}	125	-	250	-
Collector Cutoff Current at V_{CB} = 10 V			I_{CBO}	-	-	1	µA
Emitter Cutoff Current at V_{EB} = 1 V			I_{EBO}	-	-	1	µA
Gain Bandwidth 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.

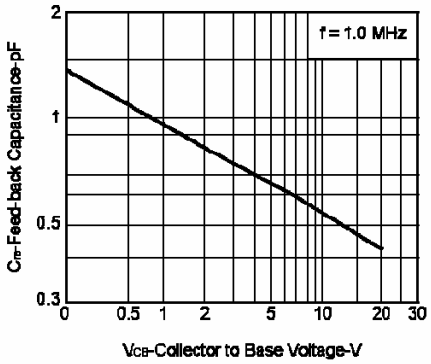
CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R	S
Range	50-100	80-160	125-250
MARKING	R23	R24	R25

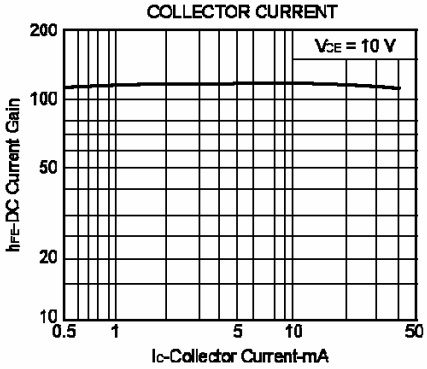
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



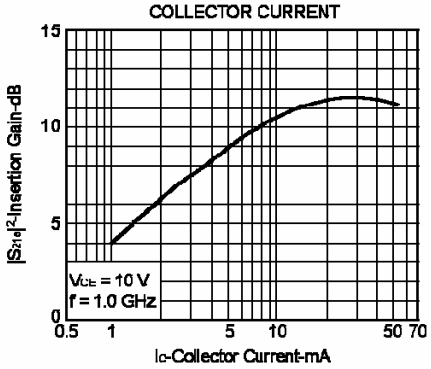
FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



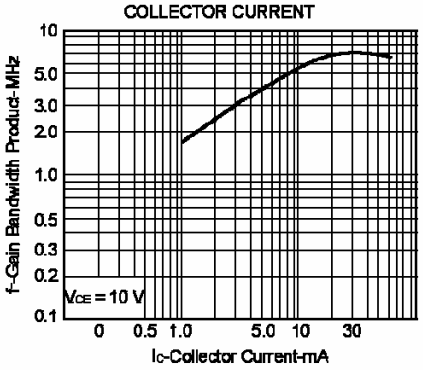
DC CURRENT GAIN vs. COLLECTOR CURRENT



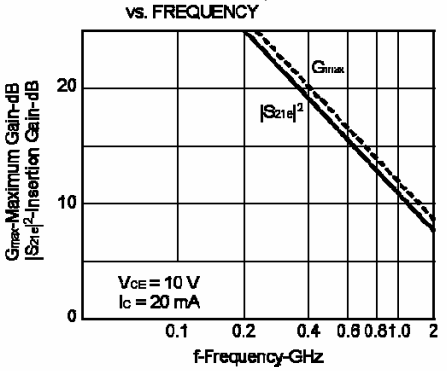
INSERTION GAIN vs. COLLECTOR CURRENT



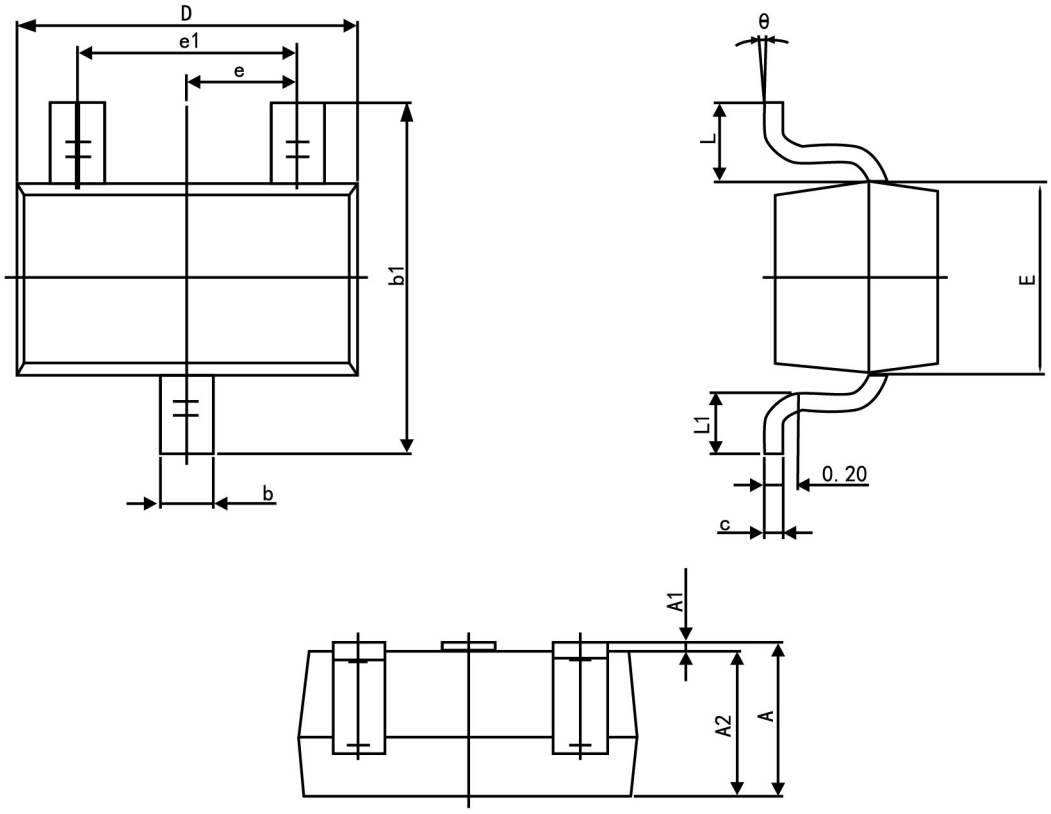
GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



INSERTION GAIN, MAXIMUM GAIN vs. FREQUENCY



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°