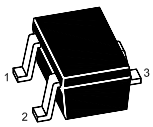
NPN Silicon Epitaxial Planar Transistor

For VHF, UHF low noise amplifier



1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package
Marking Code: J9

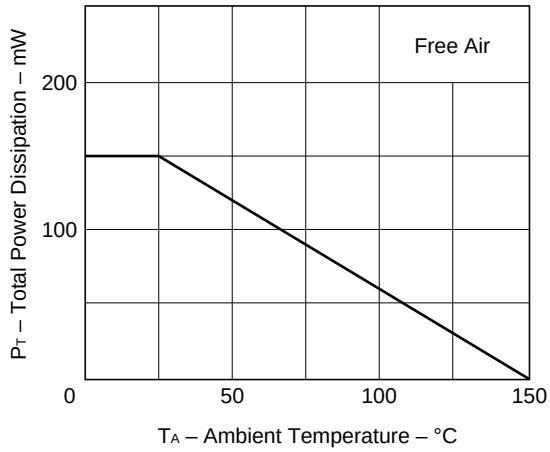
Absolute Maximum Ratings (T_a = 25 °C)

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}	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 65 to + 150	°C

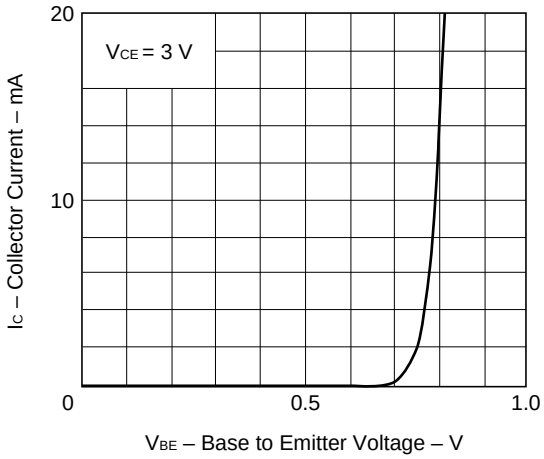
Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 3 V, I_C = 7 mA Current Gain Group Q R S	 h_{FE} h_{FE} h_{FE}	 40 70 125	 - - -	 80 140 250	 - - -
Collector Base Cutoff Current at V_{CB} = 10 V	I_{CBO}	-	-	1	µA
Emitter Base Cutoff Current at V_{EB} = 1 V	I_{EBO}	-	-	1	µA
Collector Base Breakdown Voltage at I_C = 10 µA	$V_{(BR)CBO}$	20	-	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA	$V_{(BR)CEO}$	12	-	-	V
Emitter Base Breakdown Voltage at I_E = 10 µA	$V_{(BR)EBO}$	3	-	-	V
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 5 mA	$V_{CE(sat)}$	-	-	0.5	V
Transition Frequency at V_{CE} = 3 V, I_C = 7 mA	f_T	-	7	-	GHz
Feed Back Capacitance at V_{CB} = 3 V, f = 1 MHz	C_{re}	-	-	1.5	pF
Noise Figure at V_{CE} = 3 V, I_C = 7 mA, f = 1 GHz	NF	-	-	2.5	dB

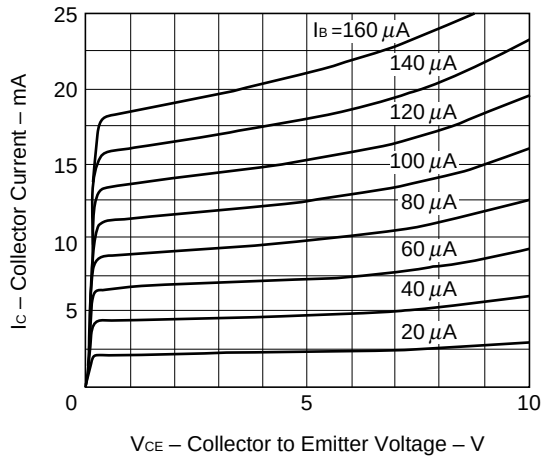
TOTAL POWER DISSIPATION
vs. AMBIENT TEMPERATURE



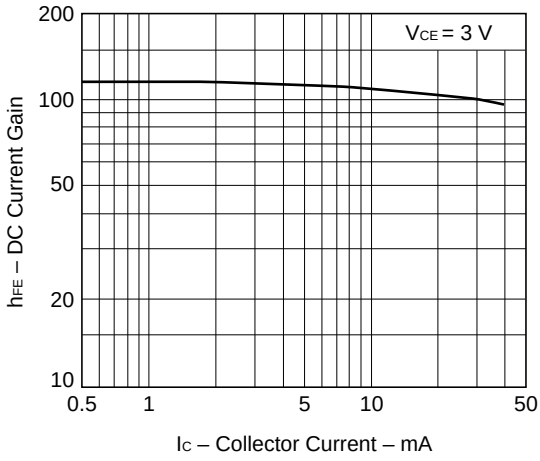
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



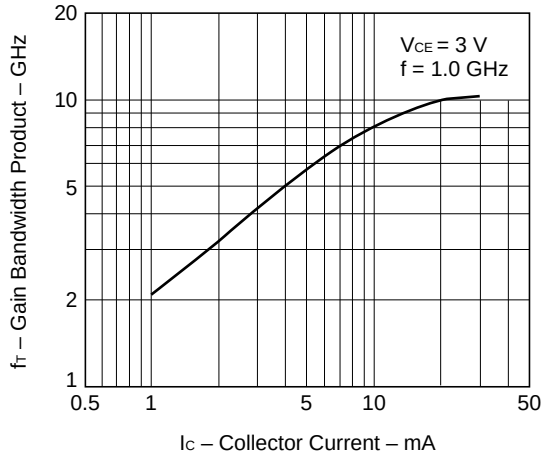
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



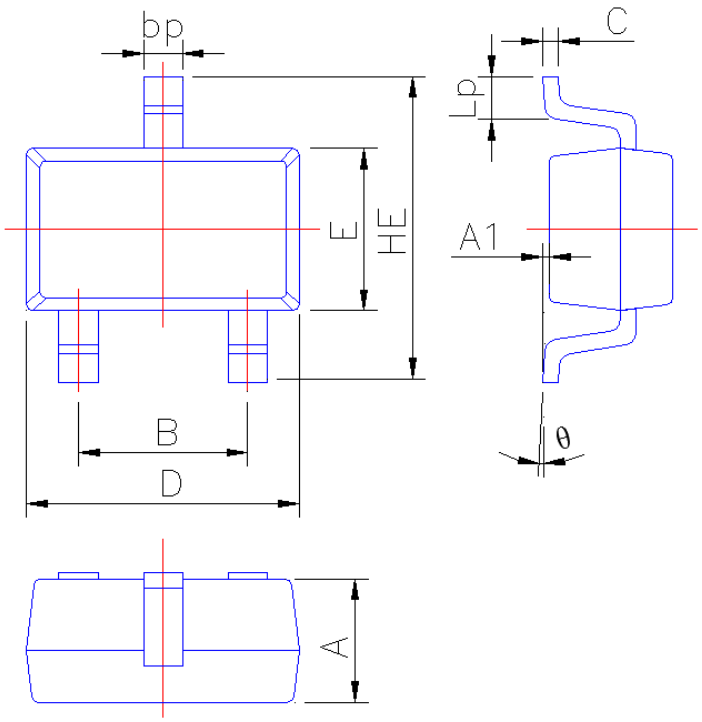
DC CURRENT GAIN vs.
COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT
vs. COLLECTOR CURRENT



SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0°	6°