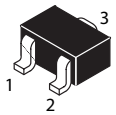
WEITRON

2SC4083

NPN Silicon Transistor

Lead(Pb)-Free



1. BASE
2. EMITTER
3. COLLECTOR

SOT-323(SC-70)

FEATURES:

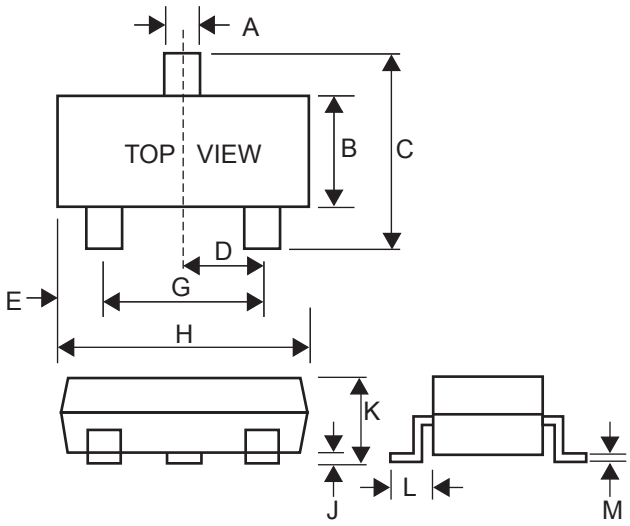
* Radio frequency amplifier
* High transition frequency
* High gain with low collector-to base time constant
* Low noise (NF)
* Marking: 1D

Maximum Ratings (T_A=25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	11	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current -Continuous	I_C	50	mA
Collector Power Dissipation	P_D	0.2	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

SOT-323 Outline Demensions

Unit:mm



SOT-323		
Dim	Min	Max
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	0.10	0.25

ELECTRICAL CHARACTERISTICS (Ta=25ºC unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage I_C=10μA, I_E=0	$V_{(BR)CBO}$	20	-	-	V
Collector-emitter breakdown voltage I_C= 1mA, I_B=0	$V_{(BR)CEO}$	11	-	-	V
Emitter-base breakdown voltage I_E= 10 μA, I_C=0	$V_{(BR)EBO}$	3	-	-	V
Collector cut-off current V_{CB} =10V, I_E=0	I_{CBO}	-	-	0.5	μA
Emitter cut-off current V_{EB} =2V, I_C=0	I_{EBO}	-	-	0.5	μA
DC current gain V_{CE} =10V, I_C= 5mA	h_{FE}	56	-	270	-
Collector-base saturation voltage I_C=10mA, I_B=5mA	$V_{CE(sat)}$	-	-	0.5	V
Transition frequency V_{CE} =10V,I_C=10mA, f =500MHz	f_T	-	1.2	-	GHz
Output capacitance V_{CB} =10V,I_E=0, f =1MHz	Cob	-	-	1.5	pF
Collector-base time constant V_{CB} =10V,I_C=10mA, f=31.8MHz	$C_C \cdot r_{bb}$	-	-	12	pS
Noise figure V_{CE} =6V,I_C=2mA,f =500MHz,Rg=50Ω	NF	-	3.5	-	dB

CLASSIFICATION OF h_{FE}

Rank	N	P	**Q**
Range	56-120	82-180	120-270

Typical Characteristics

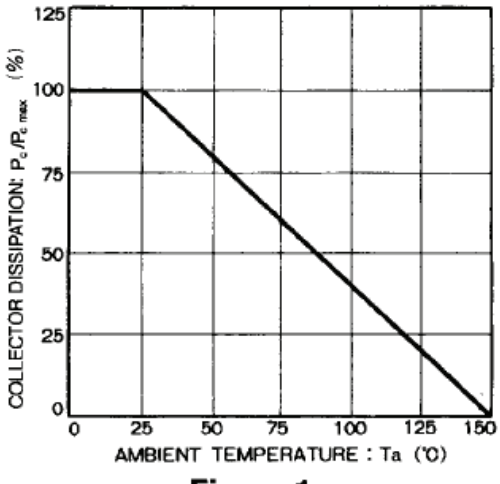


Figure 1

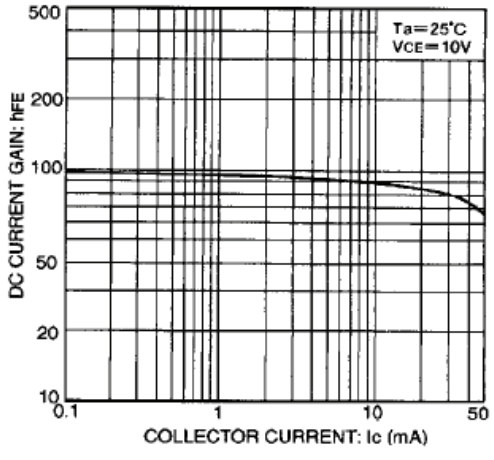


Figure 2

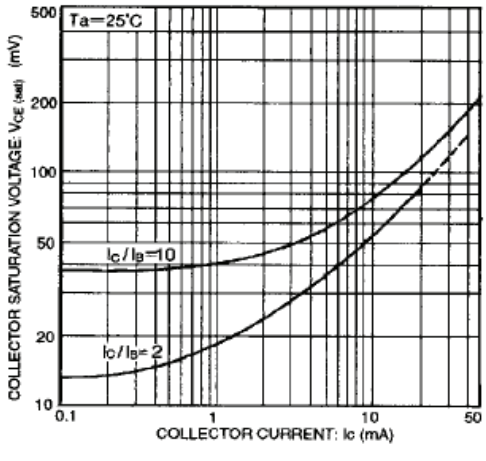


Figure 3

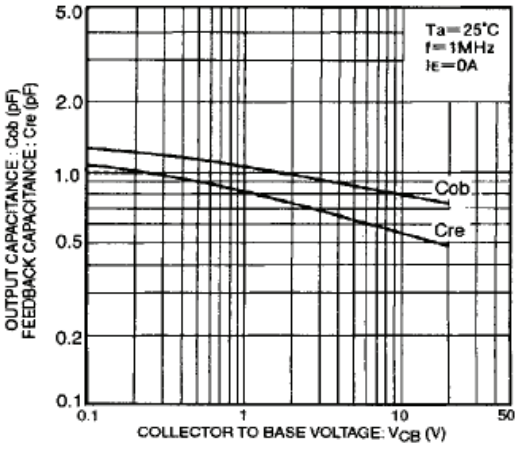


Figure 4

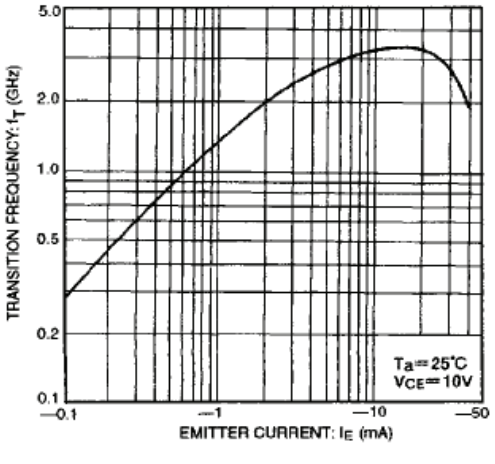


Figure 5

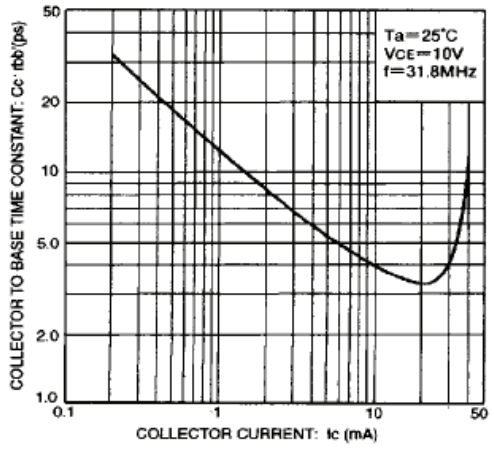


Figure 6

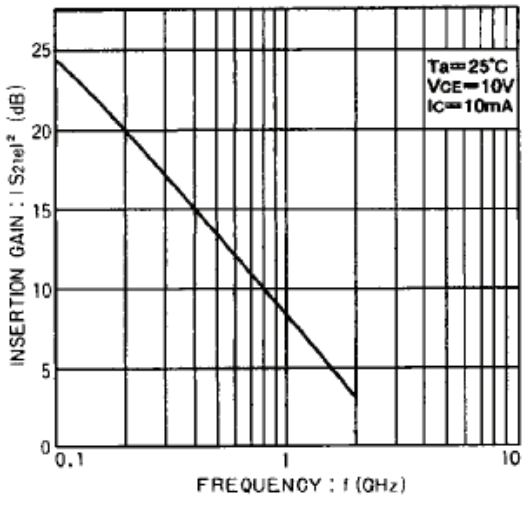


Figure 7

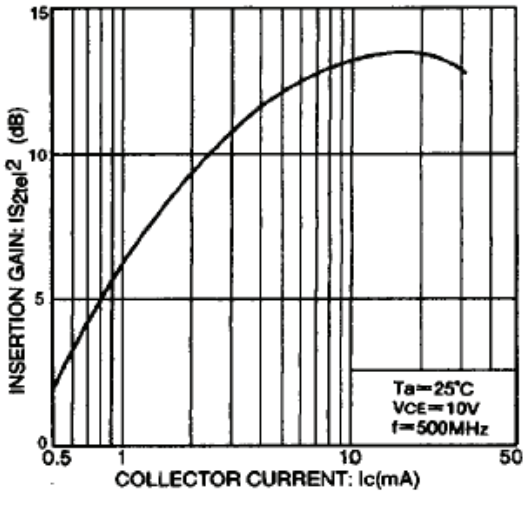


Figure 8

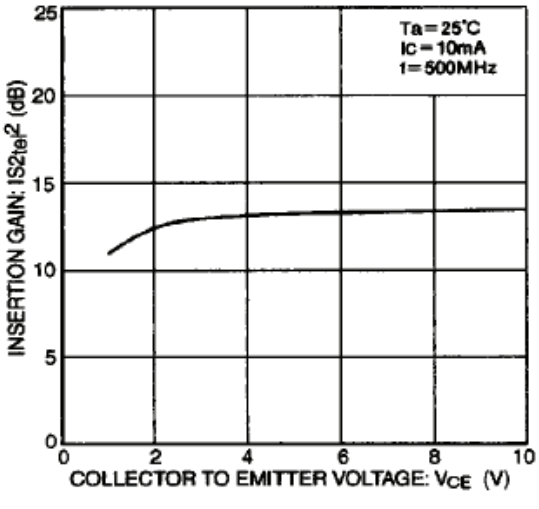


Figure 9

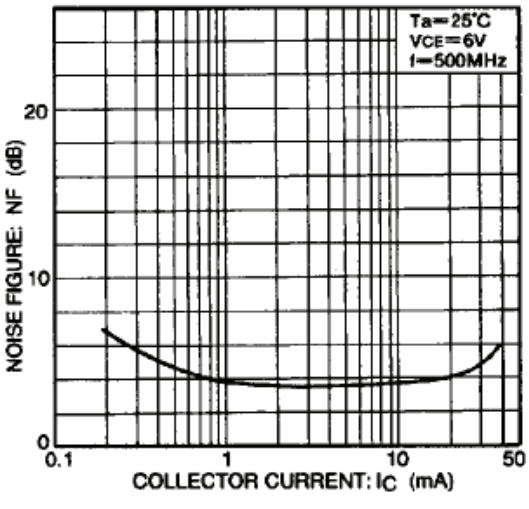


Figure 10

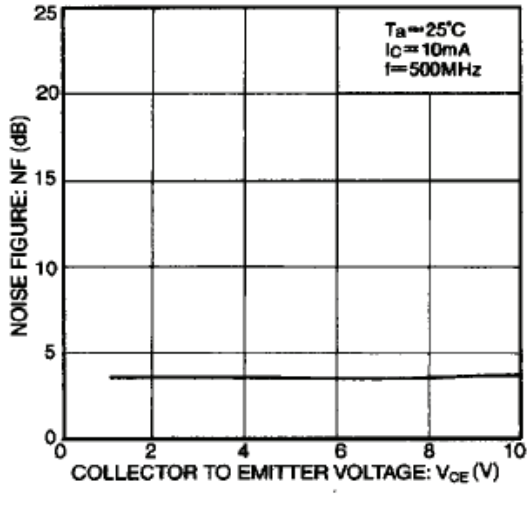


Figure 11