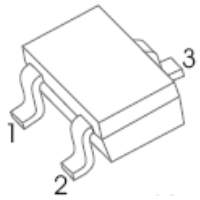
2SC4083

NPN Silicon Epitaxial Planar Transistor

for high frequency amplifier application

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}	11	V
Emitter Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 10 V, I_C = 5 mA	h_{FE}	56	-	270	-
Collector Cutoff Current at V_{CB} = 10 V	I_{CBO}	-	-	0.5	µA
Emitter Cutoff Current at V_{EB} = 2 V	I_{EBO}	-	-	0.5	µA
Collector Base Breakdown Voltage at I_C = 10 µA	$V_{(BR)CBO}$	20	-	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA	$V_{(BR)CEO}$	11	-	-	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} = 10 V, I_E = 10 mA, f = 500 MHz	f_T	1.4	3.2	-	GHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz	C_{ob}	-	0.8	1.5	pF
Noise Figure at V_{CE} = 6 V, I_C = 2 mA , f = 500 MHz, Rg = 50 Ω	NF	-	3.5	-	dB

Fig.1 Ground Emitter Propagation Characteristics

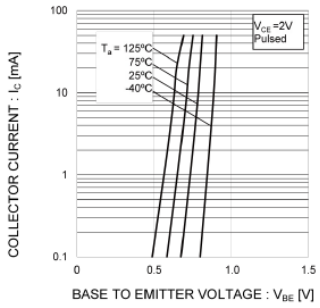


Fig.2 Typical Output Characteristics

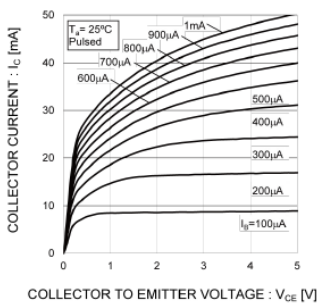


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

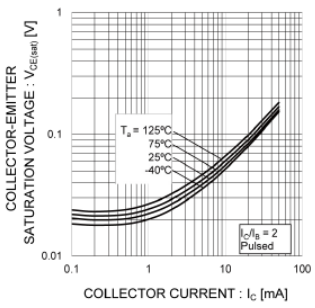


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

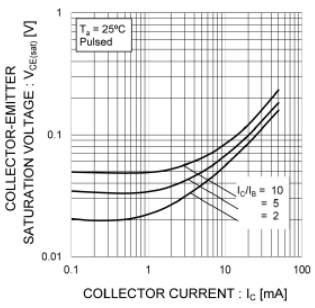


Fig.3 DC Current Gain vs. Collector Current (I)

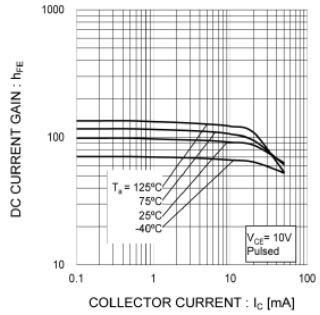


Fig.4 DC Current Gain vs. Collector Current (II)

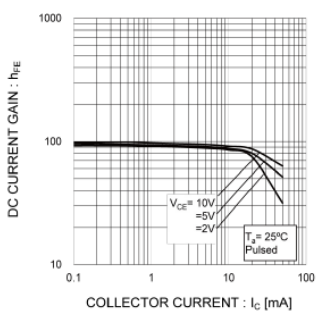


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

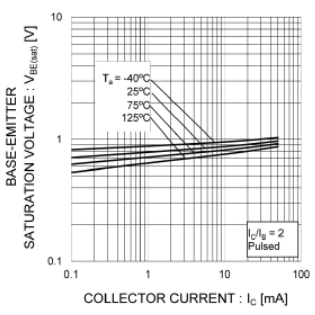


Fig.8 Gain Bandwidth Product vs. Emitter Current

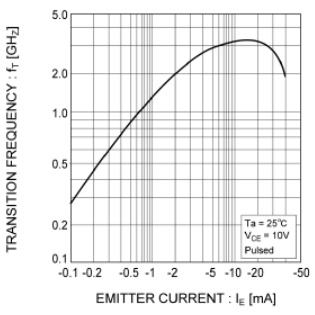


Fig.9 Capacitance vs. Reverse Bias Voltage

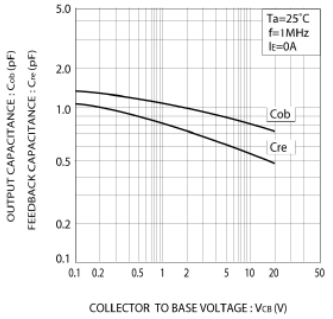


Fig.10 Collector to base time constance vs. collector current

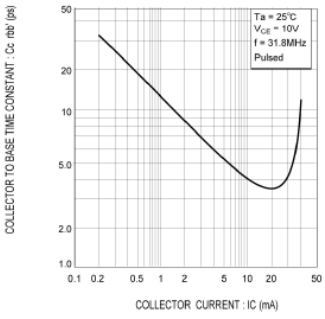


Fig.11 Noise factor vs.collector current characteristics