SSCN3904GS6

NPN Switching Transistor

➢ Features

VCE	VBE	VCESAT	IC
40V	6V	300mV	200mA

➢ Pin configuration

SOT-23

➢ Description

The NPN Transistor is designed for use in linear and switching applications. The device is housed in the SOT-23 package, which is designed for telephony and professional communication equipment.

Circuit Diagram

➢ Applications

- General purpose switching and amplification

- Telephony and professional communication equipment

➢ Ordering Information
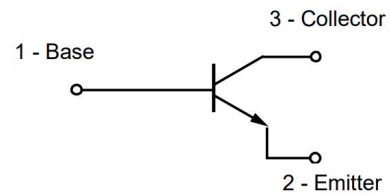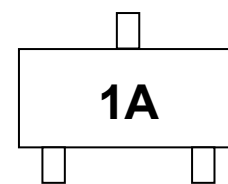
Device	Package	Shipping
SSCN3904GS6	SOT-23	3000/Reel

Marking(Top View)

➢ **Absolute Maximum Ratings(T$_A$=25℃ unless otherwise noted)**

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V$_{CBO}$	60	V
Collector- Emitter Voltage	V$_{CEO}$	40	V
Emitter-Base Voltage	V$_{EBO}$	6	V
Collector Current-Continuous	I$_C$	200	mA
Collector Power Dissipation	P$_C$	200	mW
Junction Temperature	T$_J$	150	℃
Storage Temperature	T$_{STG}$	-55 to 150	℃

➢ **Electrical Characteristics (T$_A$=25℃ unless otherwise noted)**

| Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	BV$_{CBO}$	I$_C$=10uA,I$_E$=0	60			V
Collector-emitter Breakdown Voltage	BV$_{CEO}$	I$_C$=1mA,I$_B$=0	40			V
Emitter -Base Breakdown Voltage	BV$_{EBO}$	I$_E$=10uA,I$_C$=0	6			V
Collector Cutoff Current	I$_{CEX}$	V$_{CE}$=30V, V$_{EB}$=3V			50	nA
Collector Cutoff Current	I$_{CBO}$	V$_{CB}$=30V,I$_E$=0			100	nA
Emitter Cutoff Current	I$_{EBO}$	V$_{EB}$=3V,I$_C$=0			100	nA
DC Current Gain	h$_{FE}$	V$_{CE}$=1V,I$_C$=10mA	100		300	
		V$_{CE}$=1V,I$_C$=0.1mA	40			
		V$_{CE}$=1V,I$_C$=100mA	30			
Collector-Emitter Saturation Voltage	V$_{CE(sat)}$	I$_C$=50mA,I$_B$=5mA			0.3	V
Base-Emitter Saturation Voltage	V$_{BE(sat)}$	I$_C$=50mA,I$_B$=5mA			0.95	V
Transition frequency	f$_T$	V$_{CE}$=20V,I$_C$=10mA f=100MHz	250			MHz
Delay Time	t$_d$	V$_{CC}$=3V,V$_{BE(off)}$=-0.5V I$_C$=10mA,I$_{B1}$=1mA			35	ns
Rise Time	t$_r$	V$_{CC}$=3V,V$_{BE(off)}$=-0.5V I$_C$=10mA,I$_{B1}$=1mA			35	ns
Storage Time	t$_s$	V$_{CC}$=3V,I$_C$=10mA I$_{B1}$= I$_{B2}$=1mA			200	ns
Fall Time	t$_f$	V$_{CC}$=3V,I$_C$=10mA I$_{B1}$= I$_{B2}$=1mA			50	ns

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➢ **Typical Performance Characteristics (T$_A$=25℃ unless otherwise noted)**
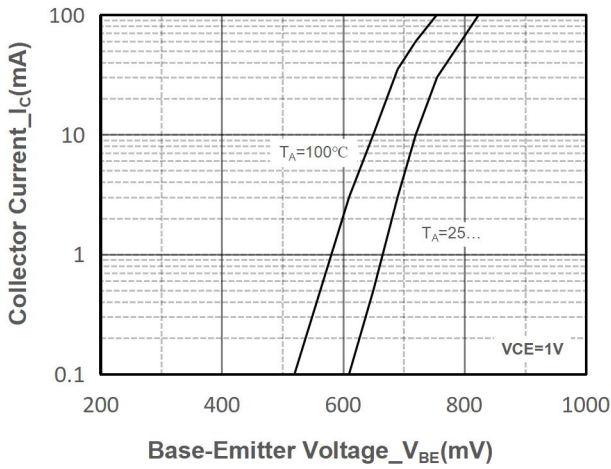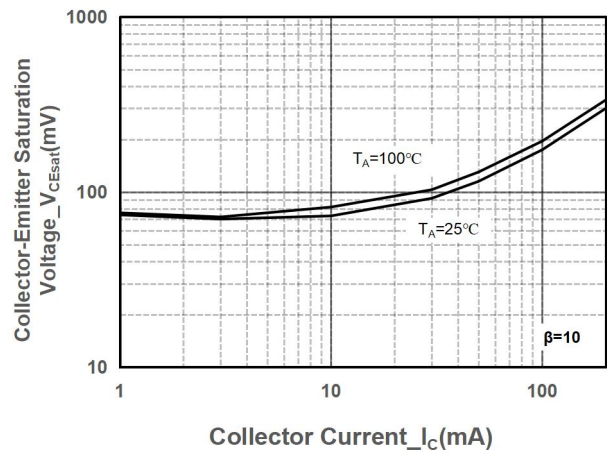

Collector Current vs. Base-Emitter Voltage
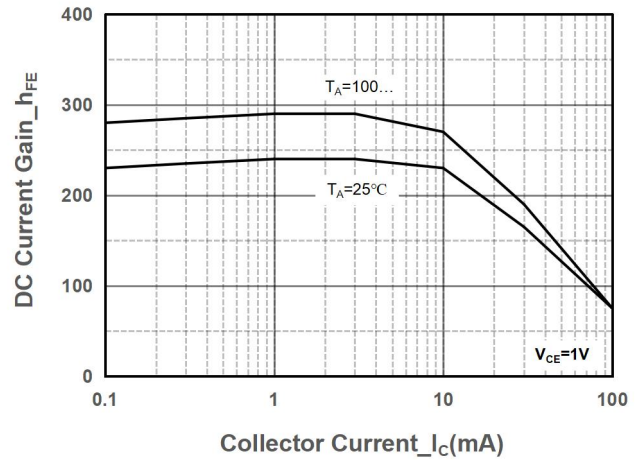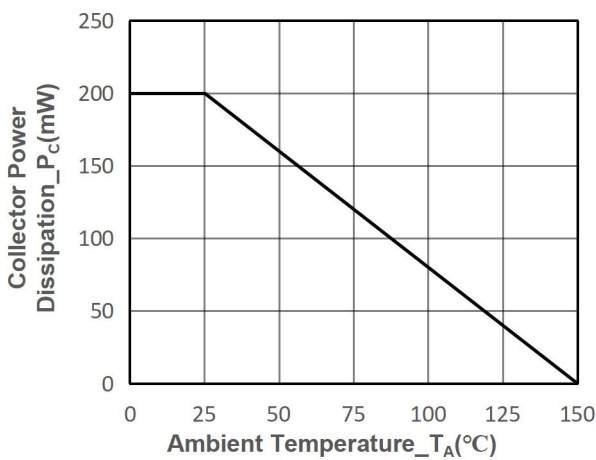

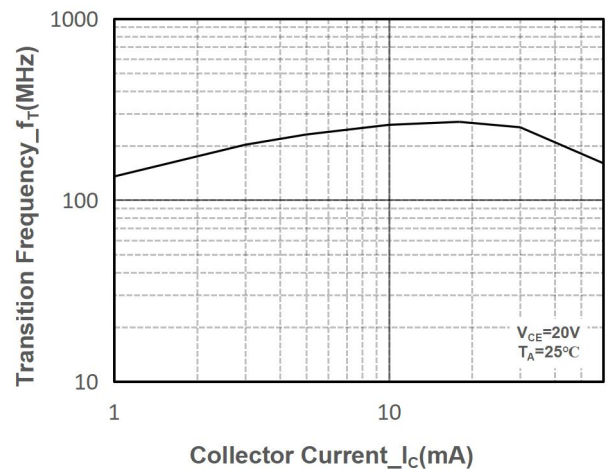**DC Current Gain vs. Collector Current**
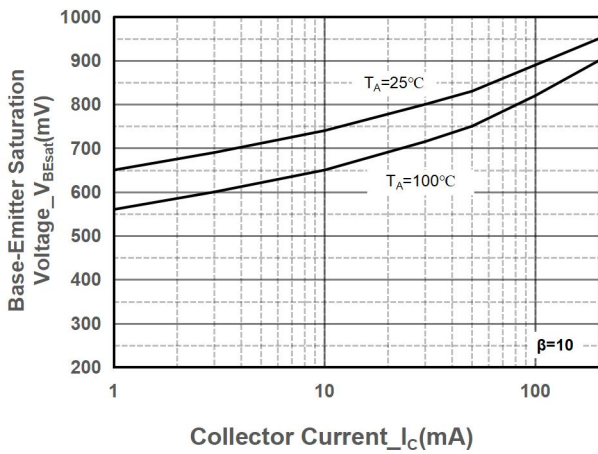
V$_{BE(sat)}$ vs. Collector Current
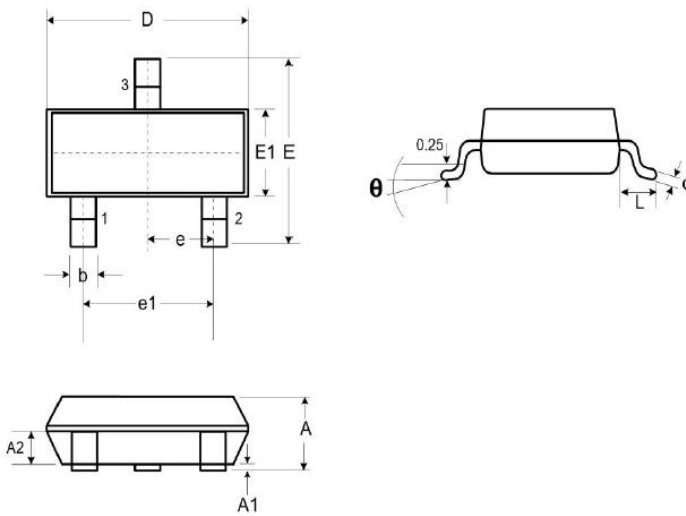

V$_{CE(sat)}$ vs. Collector Current

Power derating vs. Ambient temperature
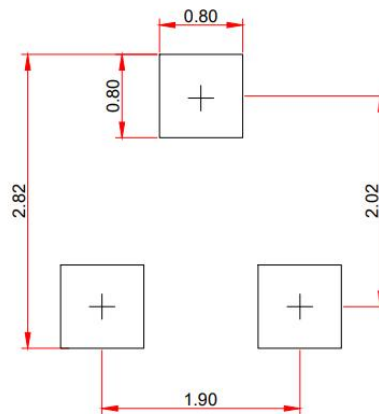

Transition Frequency vs. Collector Current

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➢ **Package Information**

DIM	Millimeters		
	Min.	Typ.	Max.
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.51
c	0.08	-	0.18
D	2.80	2.90	3.04
E	2.10	2.37	2.64
E1	1.20	1.30	1.40
e	0.95		
e1	1.90		
L	0.40	0.50	0.60
L1	0.55		
N	3		
θ	0°	-	8°

Recommended Pad outline(Unit: mm)

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