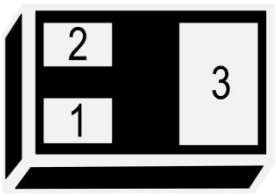
SSCN3904GN1

NPN Switching Transistor

➢ Features

VCB	VCE	VBE	IC
60V	40V	6V	200mA

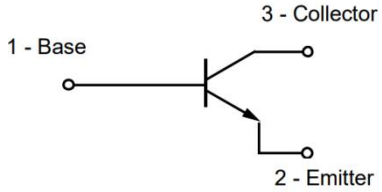
➢ Pin configuration



DFN1006-3L (Bottom View)

➢ Description

The NPN Transistor is designed for use in linear and switching applications. The device is housed in the DFN1006-3L package, which is designed for telephony and professional communication equipment.



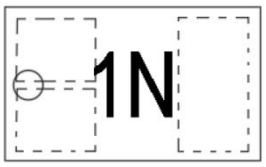
Circuit Diagram

➢ Applications

- General purpose switching and amplification
- Telephony and professional communication equipment

➢ Ordering Information

Device	Package	Shipping
SSCN3904GN1	DFN1006-3L	10000/Reel



Marking (Top View)

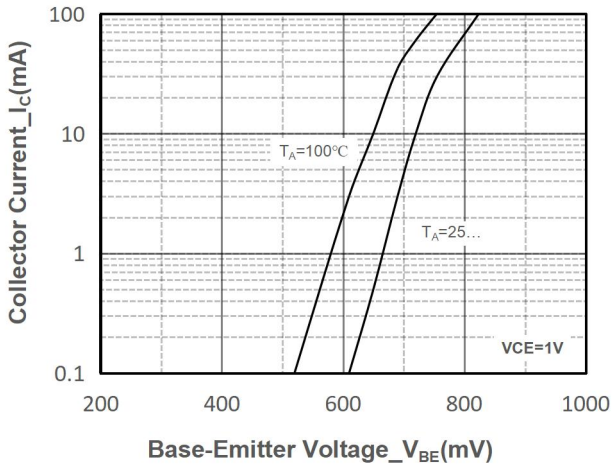
➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

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	℃

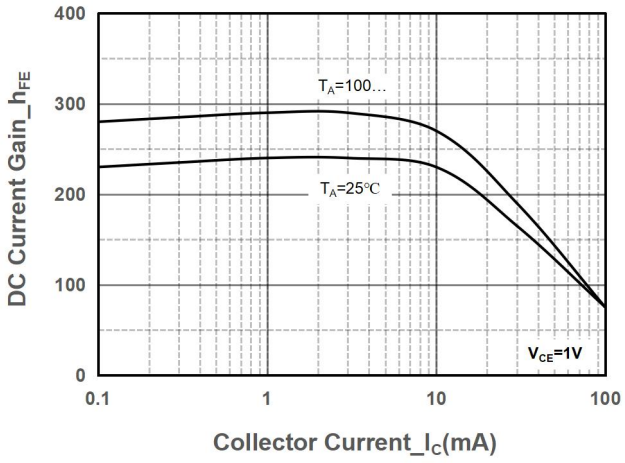
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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

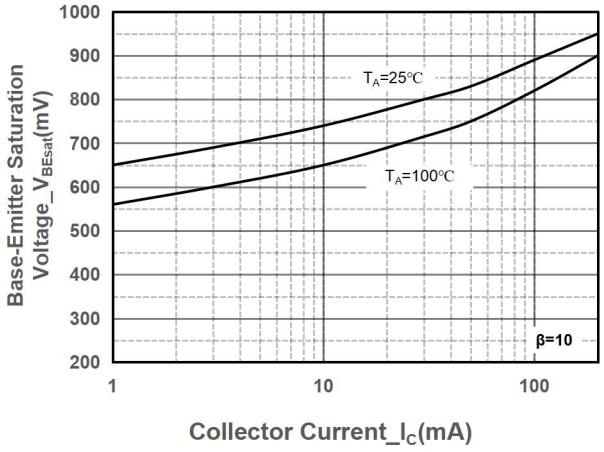
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



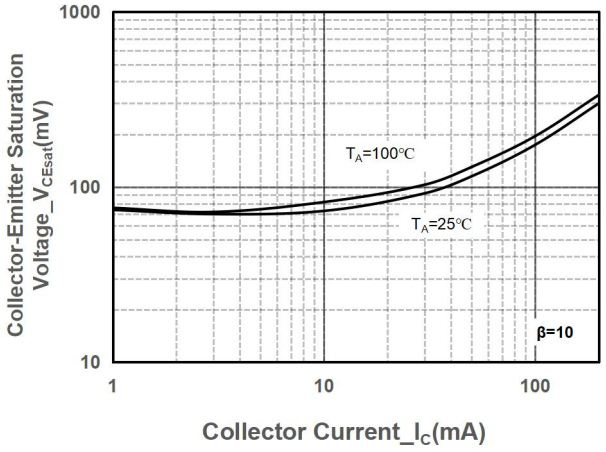
Collector Current vs. Base-Emitter Voltage



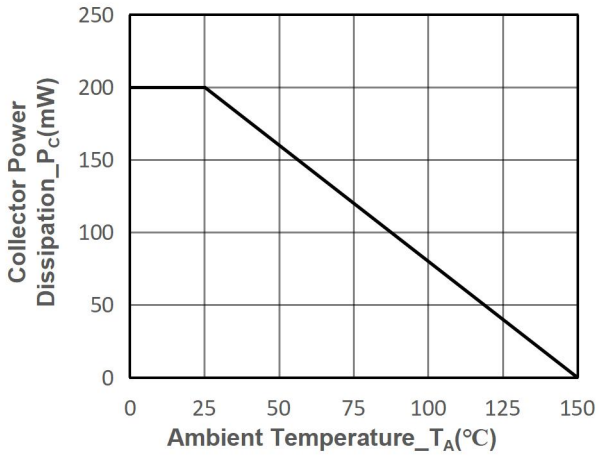
DC Current Gain vs. Collector Current



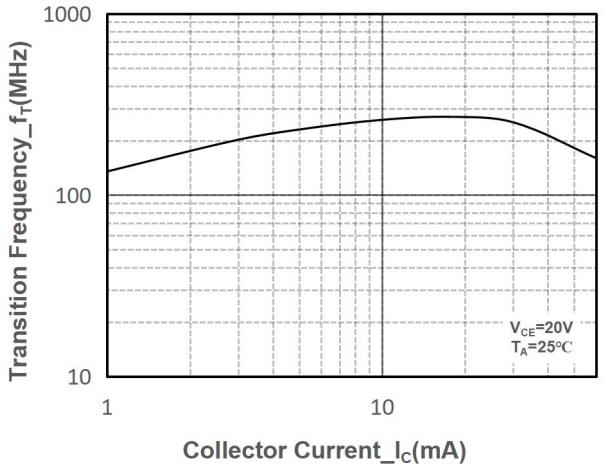
$V_{BE(sat)}$ vs. Collector Current



$V_{CE(sat)}$ vs. Collector Current



Power derating vs. Ambient temperature



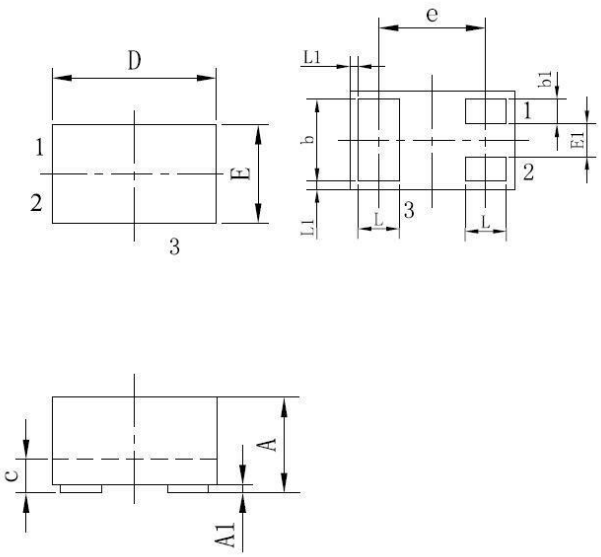
Transition Frequency vs. Collector Current

➢ Package Information

● Mechanical Data

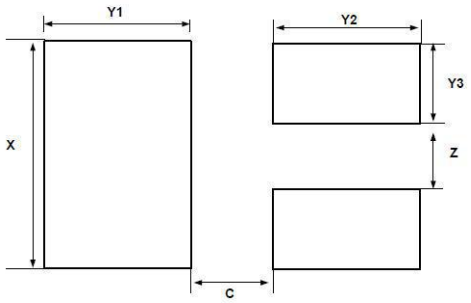
Case: DFN1006-3L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
c	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65 BSC		
E	0.55	0.60	0.65
E1	0.15	0.20	0.25
L	0.20	0.25	0.30
L1	0.05REF		

● Suggested Pad Layout



DIM	Millimeters
C	0.25
X	0.65
Y1	0.50
Y2	0.50
Y3	0.25
Z	0.20

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