SSCN3904GS8

NPN Switching Transistor

➢ Features

VCB	VCE	VBE	VCESAT	IC
60	40V	6V	300mV	200mA

➢ Description

The NPN Transistor is designed for use in linear and switching applications. The device is housed in the SOT-523 package, which is designed for telephony and professional communication equipment.

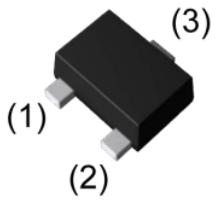
➢ Applications

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

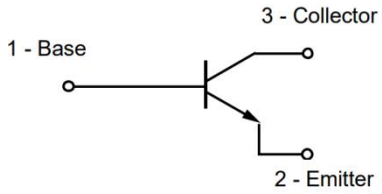
➢ Ordering Information

Device	Package	Shipping
SSCN3904GS8	SOT-523	3000/Reel

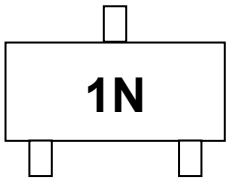
➢ Pin configuration



SOT-523



Circuit Diagram



Marking(Top View)

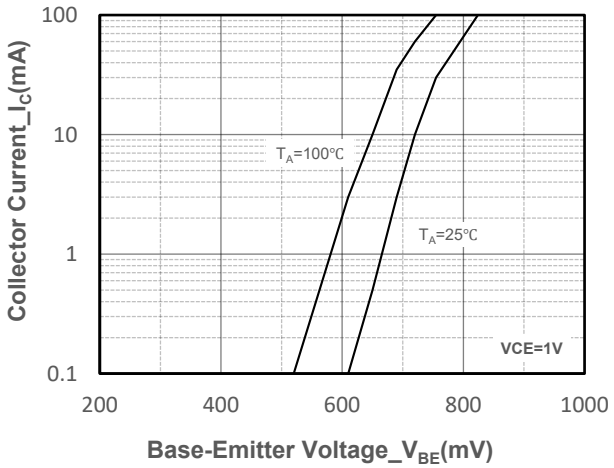
➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

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	℃

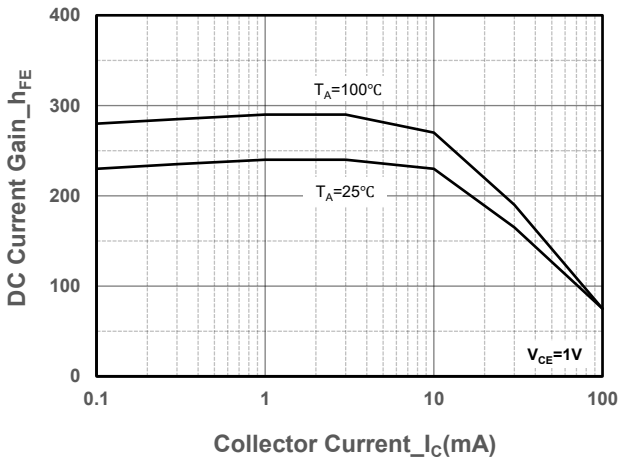
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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

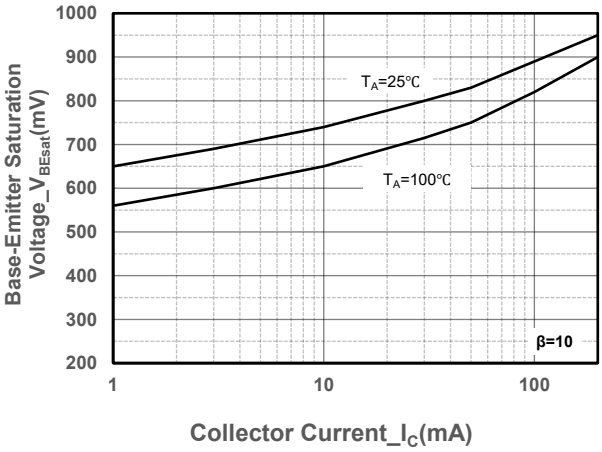
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



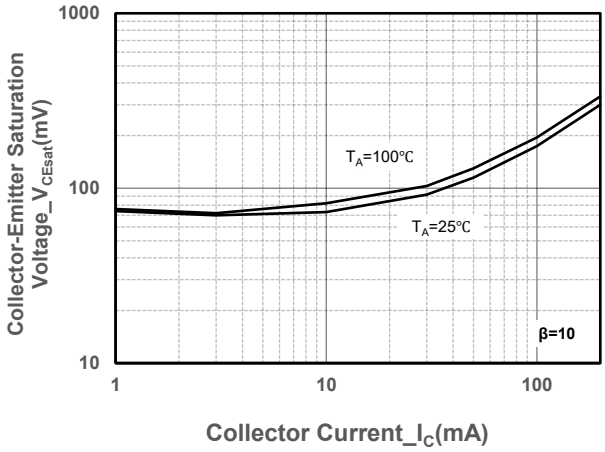
Collector Current vs. Base-Emitter Voltage



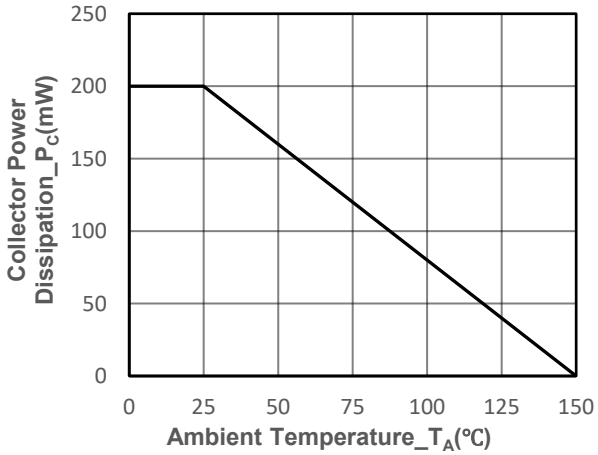
DC Current Gain vs. Collector Current



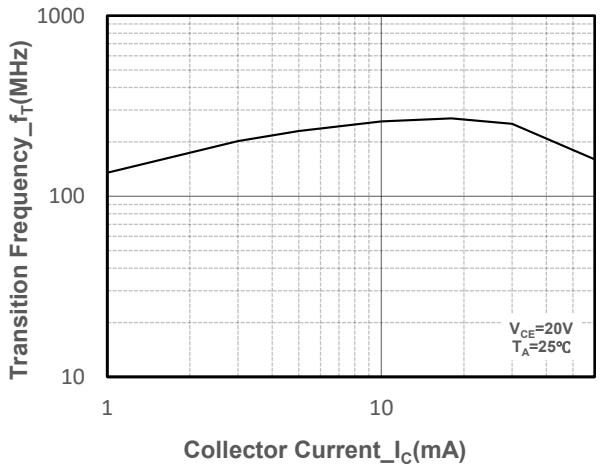
$V_{BE(sat)}$ vs. Collector Current



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

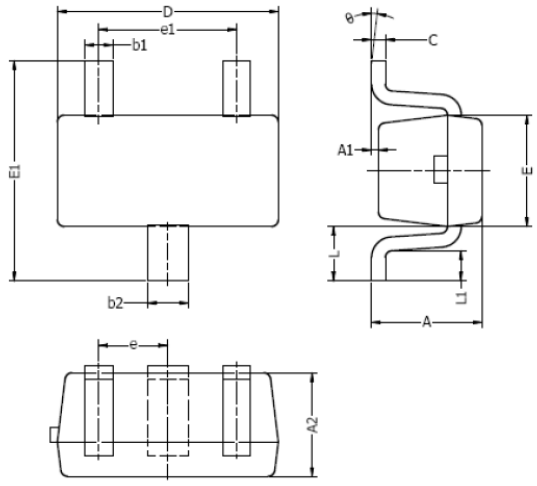


Power derating vs. Ambient temperature



Transition Frequency vs. Collector Current

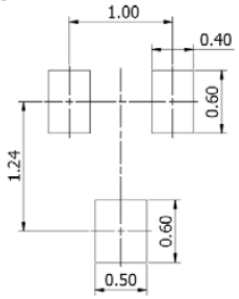
Package Information



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0°	8°	0°	8°

NOTES:
1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

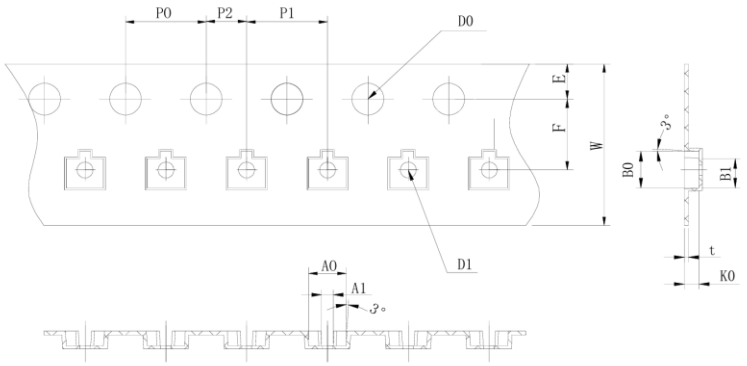
Typical Soldering Pattern:



SOT-523

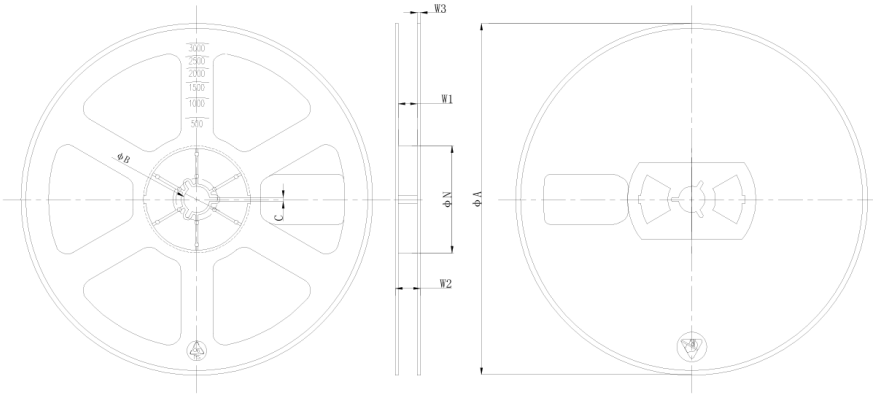
SOD-523 Tape and reel

SOD-523 Embossed Carrier Tape



Symbol	A0	A1	B0	B1	K0	D0	D1	P0
Spec	1.85±0.10	0.65±0.10	1.85±0.10	1.45±0.10	0.90±0.10	1.55±0.10	0.80±0.10	4.00±0.10
Symbol	P1	W	E	F	P2	t	t1	10*P0
Spec	4.00±0.10	8.00±0.10	1.75±0.10	3.50±0.10	2.00±0.10	0.21±0.02	0.05以上	40.0±0.10

SOD-523 Reel



ΦA	ΦN	ΦB	C	W1	W2	W3
178±2	54±2	13.2±0.3/0.2	2.2±0.3	9.5±1	13MAX	1.4±0.4

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