



SSCN4401GS6

NPN Switching Transistor

➤ Features

VCB	VCE	VEB	IC
60V	40V	6V	600mA

➤ 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.

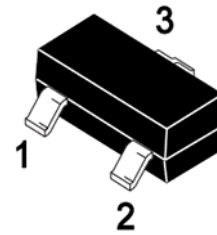
➤ Applications

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

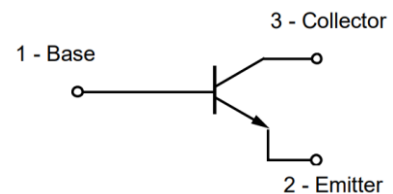
➤ Ordering Information

Device	Package	Shipping
SSCN4401GS6	SOT-23	3000/Reel

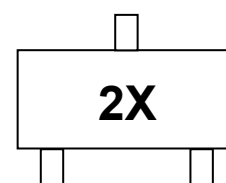
➤ Pin configuration



SOT-23



Circuit Diagram



Marking(Top View)



➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

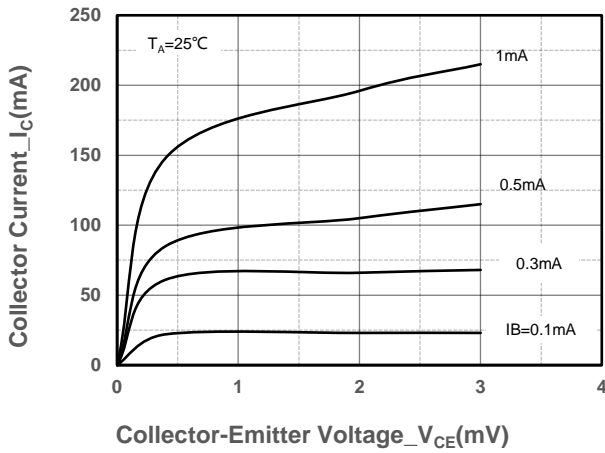
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	60	V
Collector- Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal resistance From junction to ambient	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

➤ **Electrical Characteristics** ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

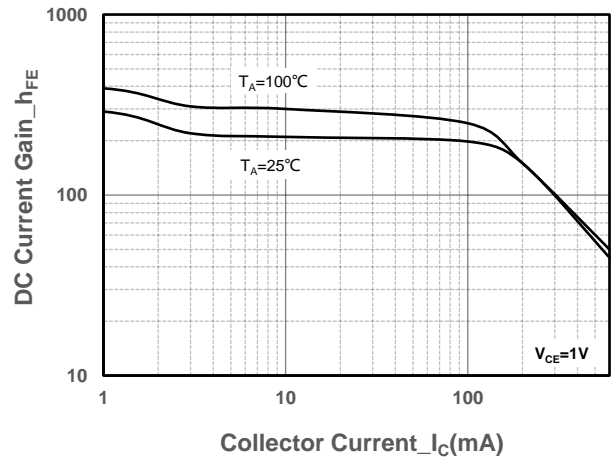
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C=100\mu\text{A}, I_E=0$	60			V
Collector-emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	40			V
Emitter -Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector Cutoff Current	I_{CB0}	$V_{CB}=50\text{V}, I_E=0$			0.1	μA
Collector Cutoff Current	I_{CEX}	$V_{CE}=35\text{V}, V_{EB(off)}=0.4\text{V}$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=1\text{V}, I_C=0.1\text{mA}$	20			
		$V_{CE}=1\text{V}, I_C=1\text{mA}$	40			
		$V_{CE}=1\text{V}, I_C=10\text{mA}$	80			
		$V_{CE}=1\text{V}, I_C=150\text{mA}$	100		300	
		$V_{CE}=1\text{V}, I_C=500\text{mA}$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			0.40	V
		$I_C=500\text{mA}, I_B=50\text{mA}$			0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			0.95	V
		$I_C=500\text{mA}, I_B=50\text{mA}$			1.20	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=20\text{mA}$ $f=100\text{MHz}$	250			MHz
Delay time	t_d	$V_{CC}=30\text{V}, V_{BE(off)}=-2\text{V},$			15	ns
Rise time	t_r	$I_C=150\text{mA}, I_{B1}=15\text{mA}$			20	ns
Storage time	t_s	$V_{CC}=30\text{V}, I_C=150\text{mA},$			225	ns
Fall time	t_f	$I_{B1}=I_{B2}=15\text{mA}$			60	ns



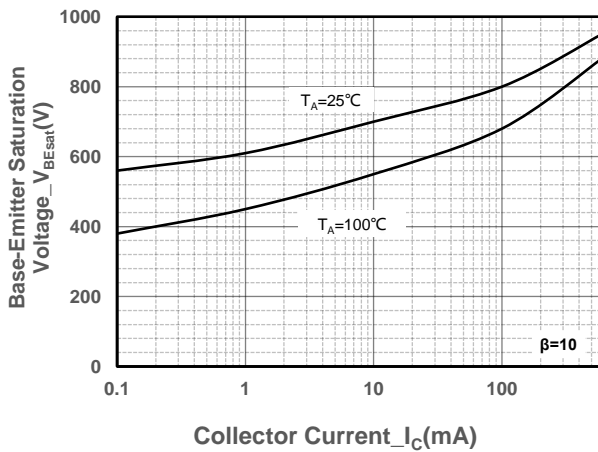
➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



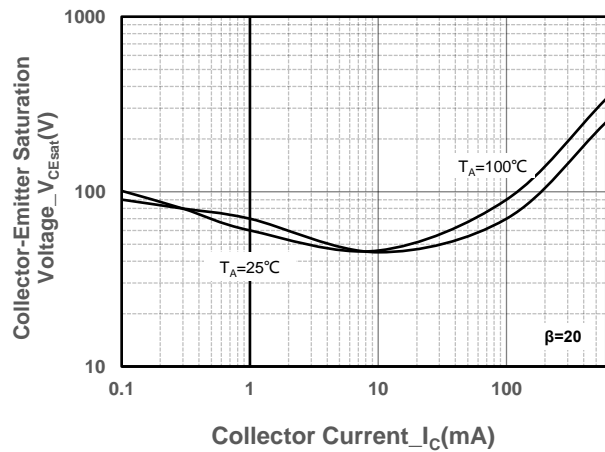
Collector Current vs. Collector-Emitter Voltage



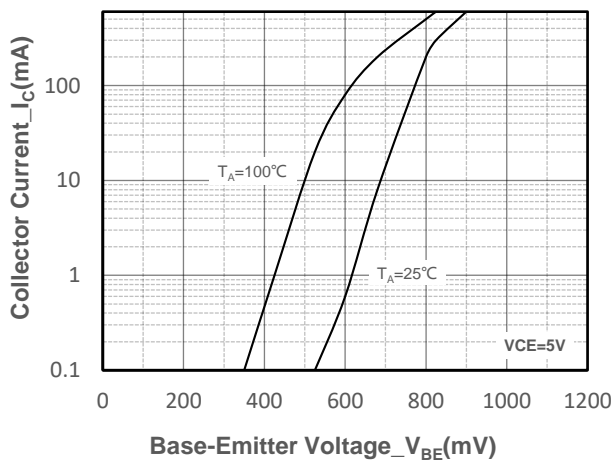
DC Current Gain vs. Collector Current



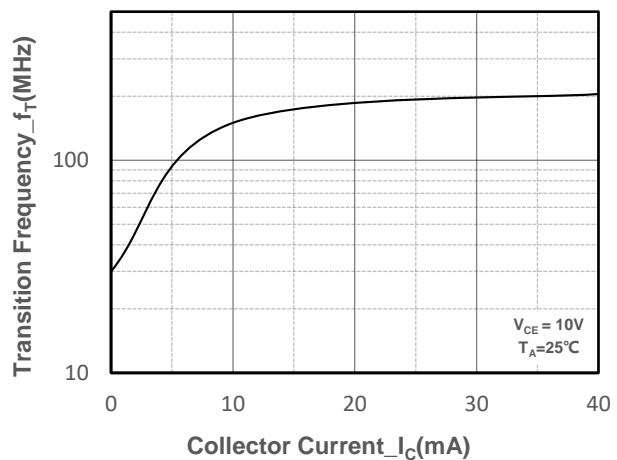
$V_{BE(sat)}$ vs. Collector Current



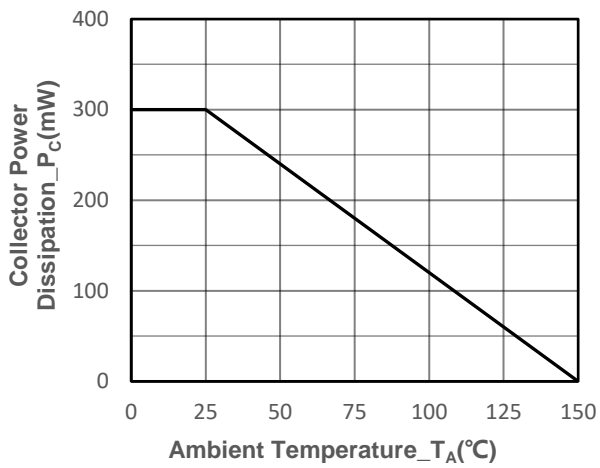
$V_{CE(sat)}$ vs. Collector Current



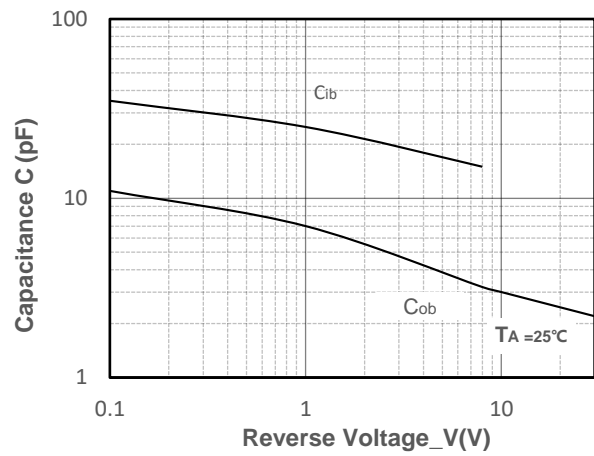
Collector Current vs. Base-Emitter Voltage



Transition Frequency vs. Collector Current



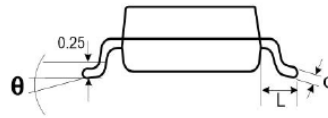
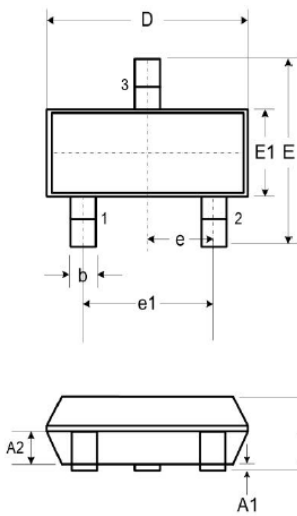
Power derating vs. Ambient temperature



Capacitance vs. Reverse Voltage

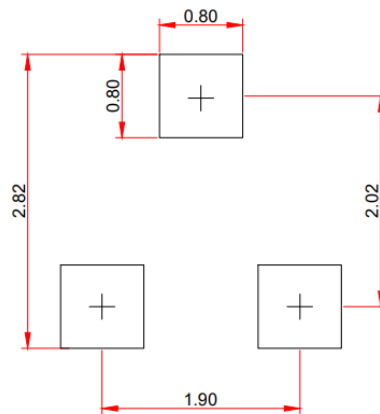


● Package Information



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	1.90		
e1	0.95		
L	0.40	0.50	0.60
L1	0.55		
N	3		
θ	0°	-	8°

Recommended Pad outline(Unit: mm)





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