



## SSCN2222AGSG

High Frequency High Gain NPN Power BJT

### ➤ Features

VCB	VCE	VEB	IC
75V	40V	6V	600mA

### ➤ Description

This product is general usage and suitable for many different applications. It can be used for medium power amplifiers and switches requiring collector currents up to 600 mA.

### ➤ Applications

- Low current and high precision circuits such preamplifiers, oscillators, current mirror configuration
- Medium power amplification and switching

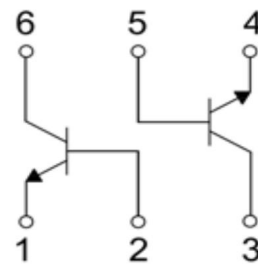
### ➤ Ordering Information

Device	Package	Shipping
SSCN2222AGSG	SOT-363	3000/Reel

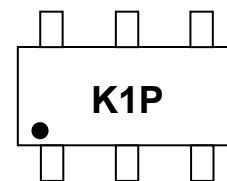
### ➤ Pin configuration



**SOT-363**



**Circuit Diagram**



**Marking(Top View)**



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

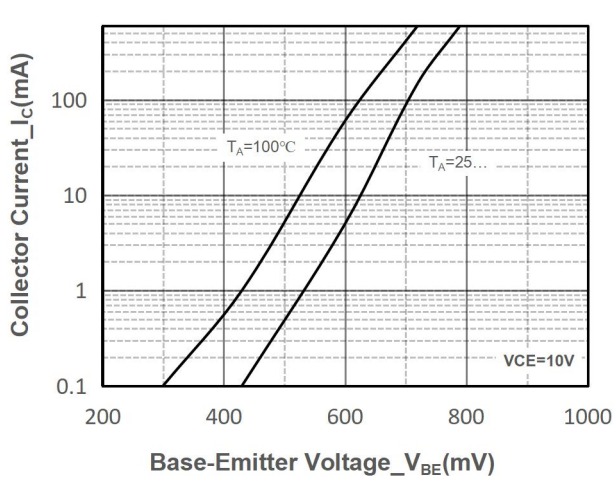
Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	75	V
Collector- Emitter Voltage	$V_{CE0}$	40	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current-Continuous	$I_C$	600	mA
Collector Power Dissipation	$P_C$	200	mW
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to 150	$^{\circ}\text{C}$

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

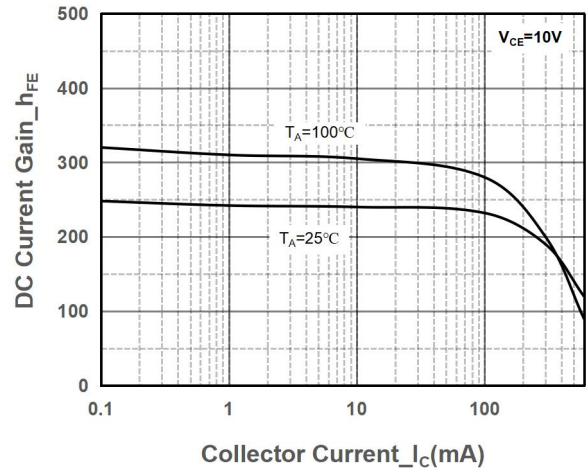
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=0.1\text{mA}, I_E=0$	75			V
Collector-emitter Breakdown Voltage	$BV_{CE0}$	$I_C=1\text{mA}, I_B=0$	40			V
Emitter -Base Breakdown Voltage	$BV_{EB0}$	$I_E=0.1\text{mA}, I_C=0$	6			V
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=60\text{V}, I_E=0$			0.01	$\mu\text{A}$
Collector Cutoff Current	$I_{CEX}$	$V_{CE}=60\text{V}, V_{BE}=3\text{V}$			0.01	$\mu\text{A}$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=3\text{V}, I_C=0$			0.01	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100		300	
	$h_{FE2}$	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35			
	$h_{FE3}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	50			
	$h_{FE4}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75			
	$h_{FE5}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40			
	$h_{FE6}$	$V_{CE}=1\text{V}, I_C=150\text{mA}$	35			
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.0	V
	$V_{CE(sat)2}$	$I_C=500\text{mA}, I_B=15\text{mA}$			0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C=500\text{mA}, I_B=50\text{mA}$			2.0	V
	$V_{BE(sat)2}$	$I_C=500\text{mA}, I_B=15\text{mA}$			1.2	V
Transition frequency	fT	$V_{CE}=20\text{V}, I_C=20\text{mA}$ $f=100\text{MHz}$	300			MHz
Output Capacitance	Cob	$V_{CB}=10\text{V}, I_E=0,$ $f=1\text{MHz}$			8	pF
Input Capacitance	Cib	$V_{EB}=0.5\text{V}, I_C=0,$ $f=1\text{MHz}$			25	pF
Noise Figure	NF	$V_{CE}=10\text{V}, I_C=100\mu\text{A},$ $f=1\text{KHz}, R_s=1\text{K}\Omega$			4	dB
Delay Time	td	$V_{CC}=30\text{V}, I_C=150\text{mA},$			10	ns
Rise Time	tr	$I_{B1}=15\text{mA}$			25	ns
Storage Time	ts	$V_{CC}=30\text{V}, I_C=150\text{mA},$			225	ns
Fall Time	tf	$I_{B1}= I_{B2}=15\text{mA}$			60	ns



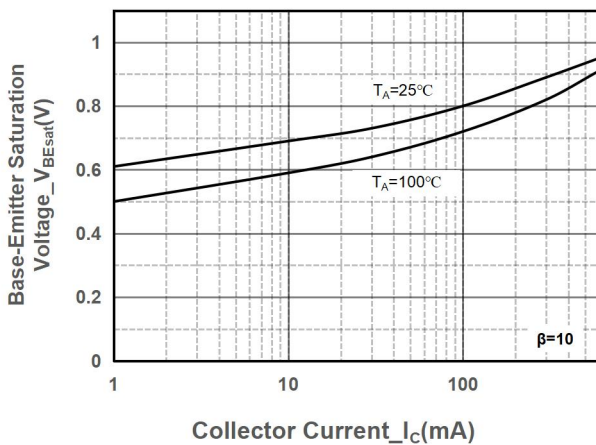
## Typical Performance Characteristics (TA=25°C unless otherwise noted)



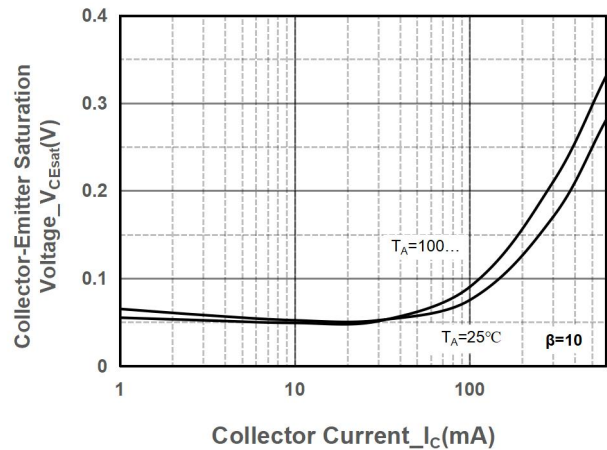
Collector Current vs. Base-Emitter Voltage



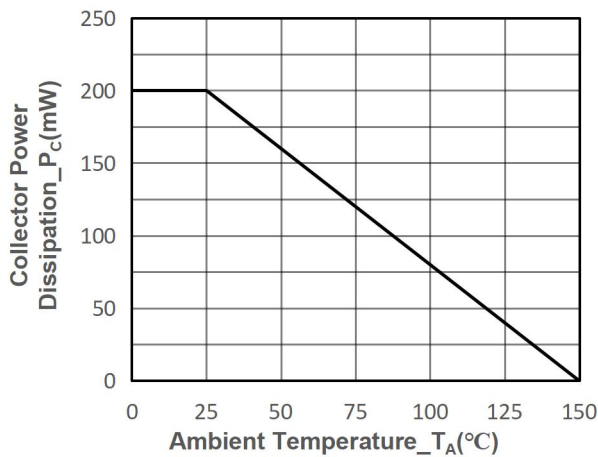
DC Current Gain vs. Collector Current



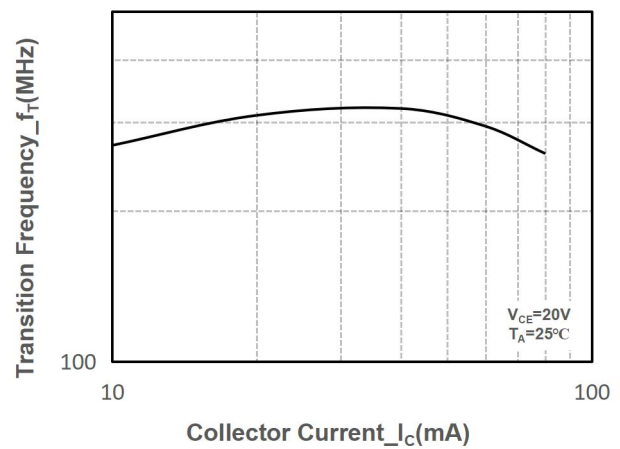
$V_{BE(sat)}$  vs. Collector Current



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



Power derating vs. Ambient temperature

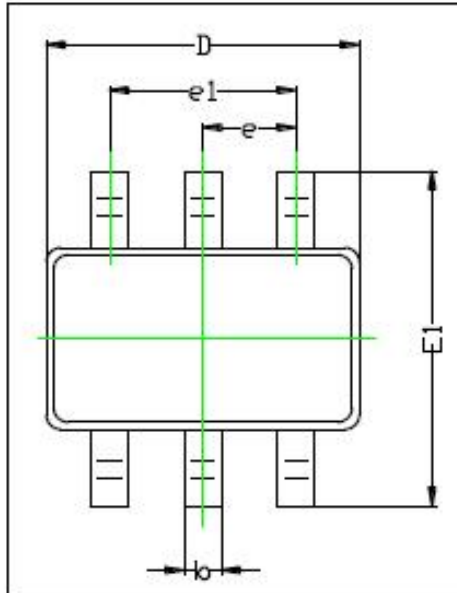


Transition Frequency vs. Collector Current

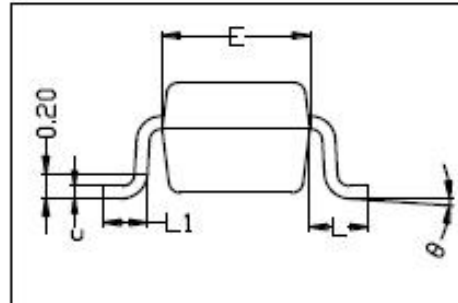
## ➤ Package Information

### SOT-363

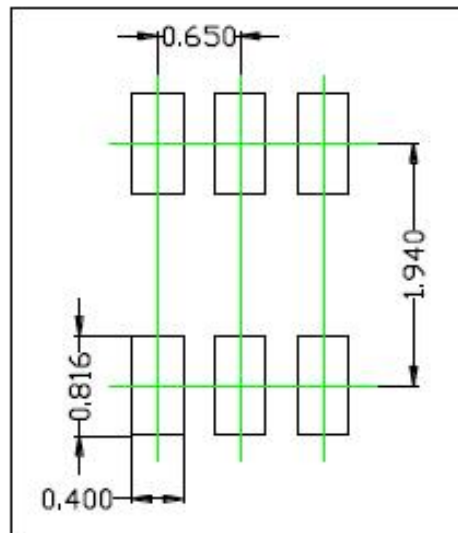
TOP VIEW



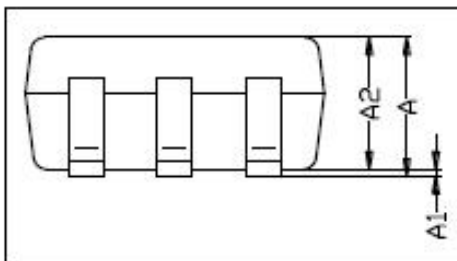
SIDE VIEW



SOLDING PATTERN



FRONT VIEW



SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.900	1.000
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.300
c	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.450
θ	0°	8°



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