



SSCN123GS6

NPN Type Digital Transistor (built-in resistors)

Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-5~+12V	100mA	2.2kΩ	21

Description

Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).

The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects. Only the on/off conditions need to be set for operation, making the device design easy.

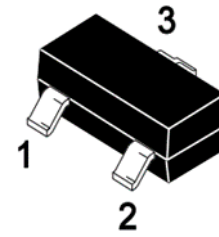
Applications

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

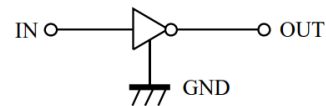
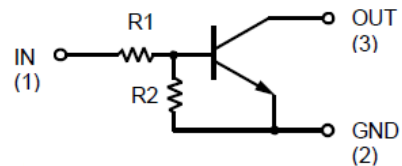
Ordering Information

Device	Package	Shipping
SSCN123GS6	SOT-23	3000/Reel

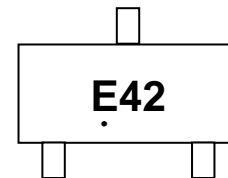
Pin configuration



SOT-23



Circuit Diagram



Marking (Top View)



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

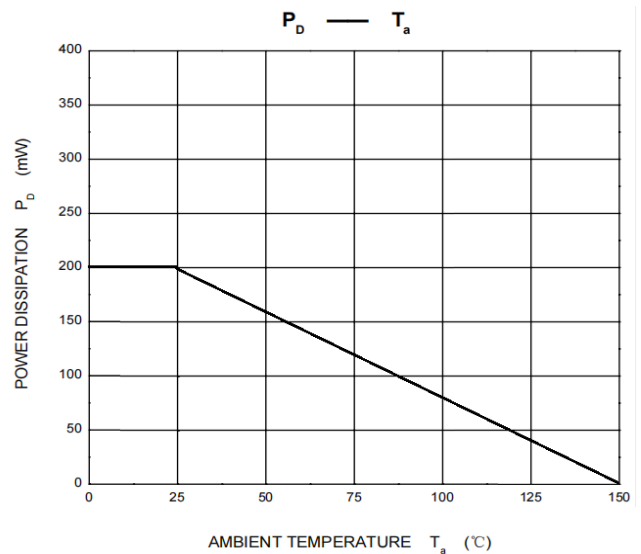
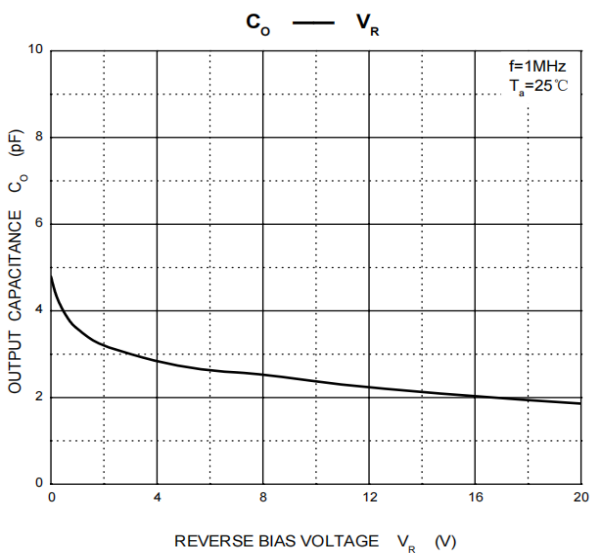
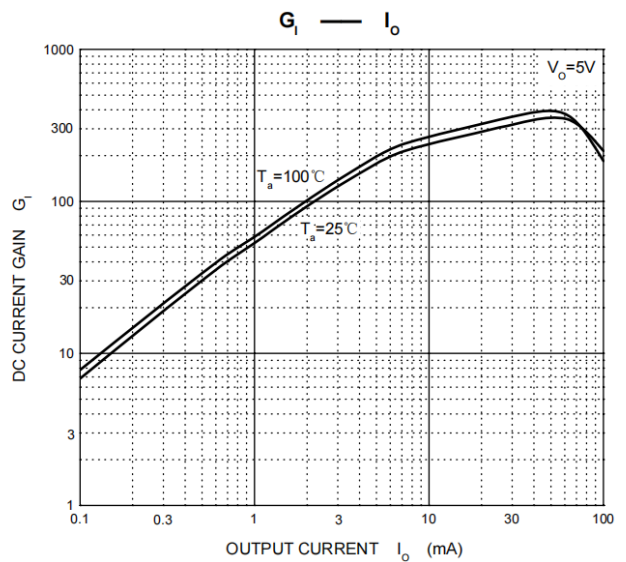
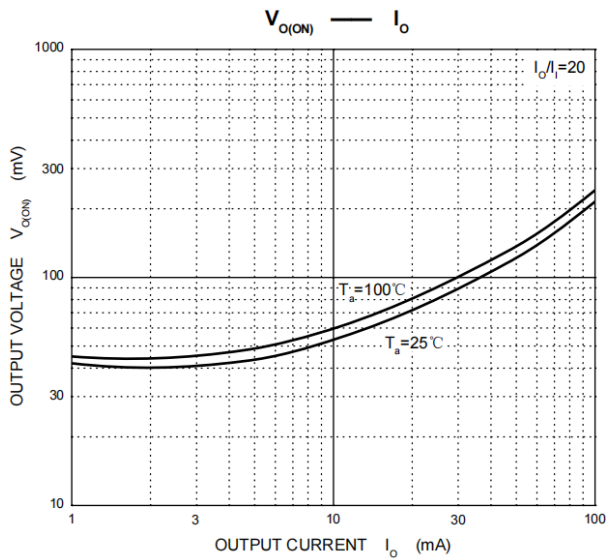
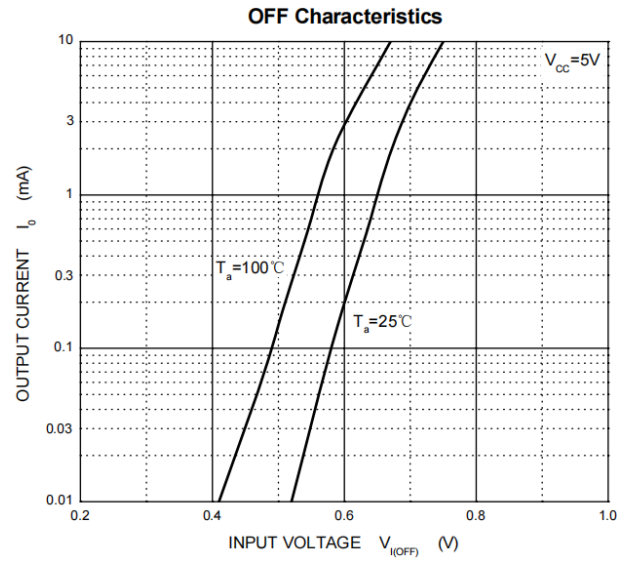
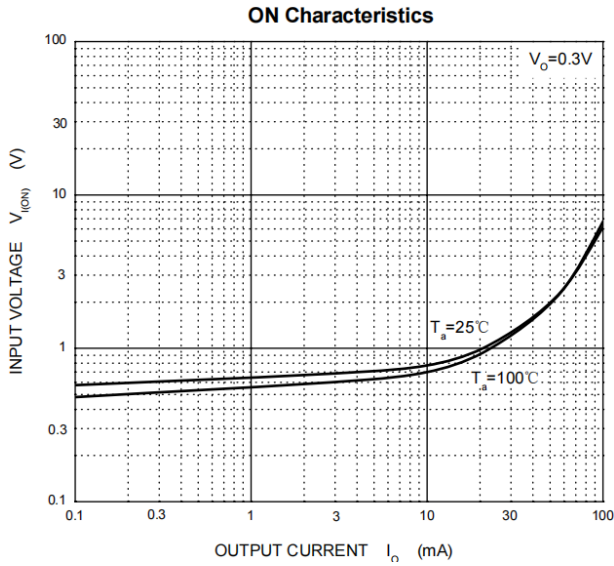
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5 to +12	V
Output current	I_o	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = 5V, I_o = 0.1mA$	0.5			V
	$V_{I(on)}$	$V_{CC} = 0.3V, I_o = 5mA$			1.1	V
Output Voltage	$V_{O(on)}$	$I_o/I_i = 5mA/0.25mA$		0.1	0.3	V
Input Current	I_i	$V_i = 5V$			3.6	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_i = 0V$			0.5	μA
DC Current Gain	G_1	$V_o = 5V, I_o = 10mA$	80			
Input Resistance	R_1		1.54	2.2	2.86	$K\Omega$
Resistance Ration	R_2/R_1		17	21	26	
Transition Frequency	f_T	$V_o=10V, I_o=5mA, f=100MHz$		250		MHz



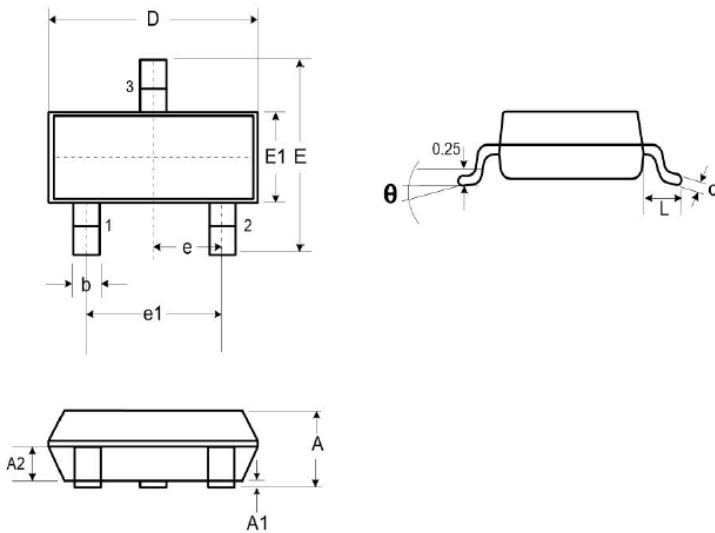
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



➤ Package Information

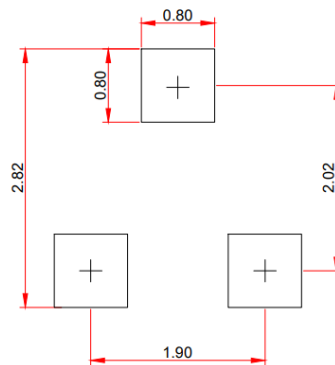
● Mechanical Data

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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





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