



## SSCN123GS8

### 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.

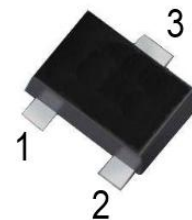
#### ➤ Applications

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

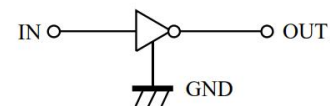
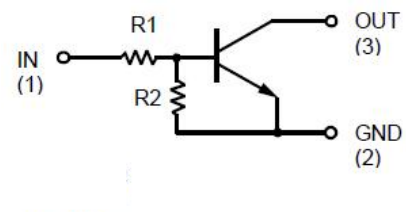
#### ➤ Ordering Information

Device	Package	Shipping
SSCN123GS8	SOT-523	3000/Reel

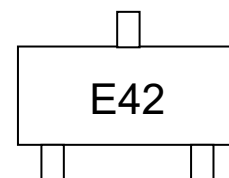
#### ➤ Pin configuration



**SOT-523**



**Circuit Diagram**



**Marking (Top View)**



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

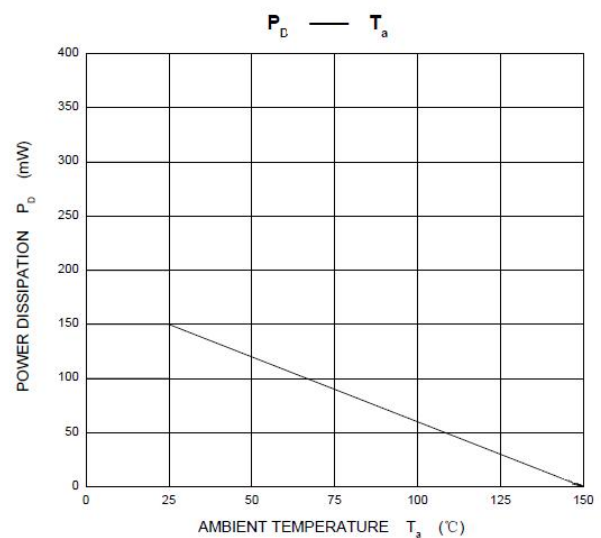
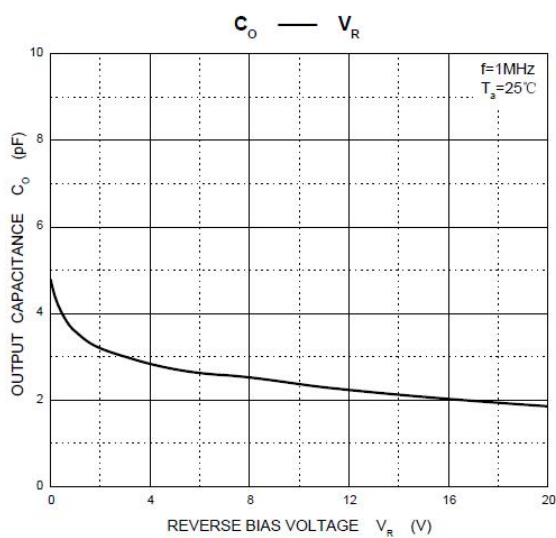
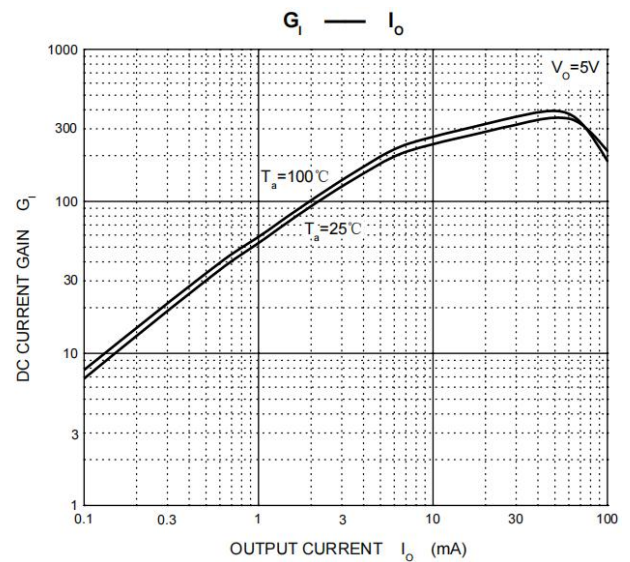
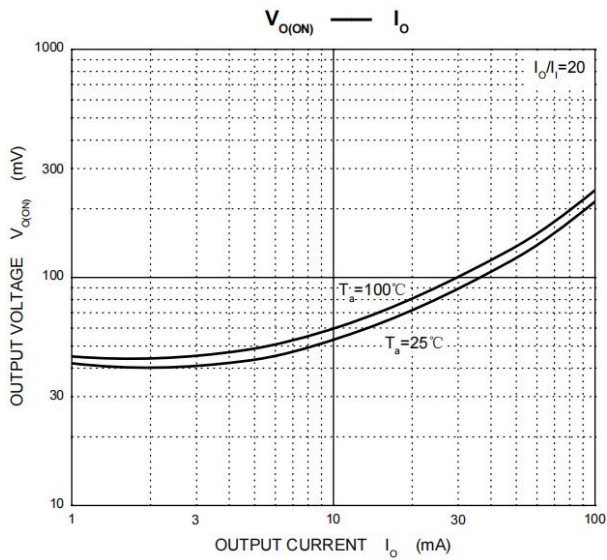
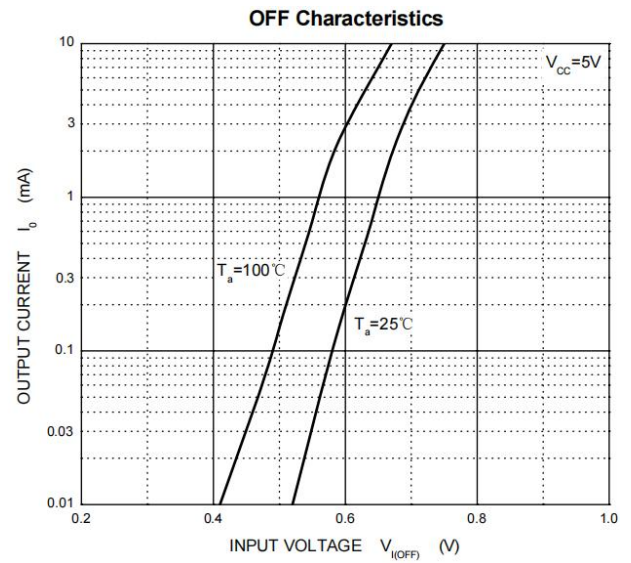
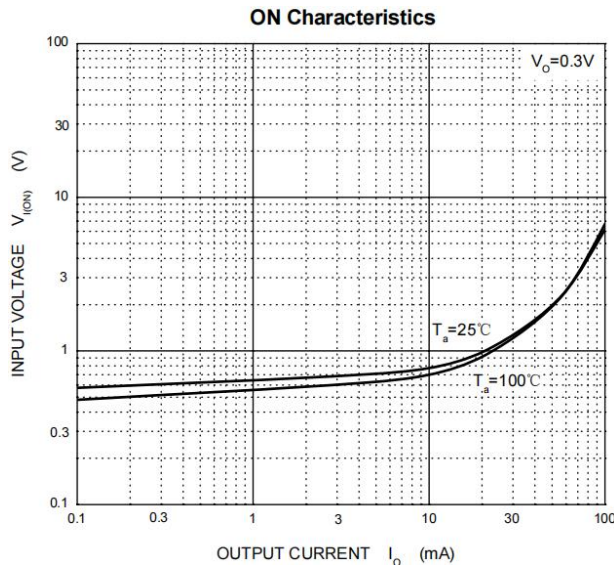
Parameter	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	50	V
Input Voltage	$V_{IN}$	-5 to +12	V
Output current	$I_O$	100	mA
Power Dissipation	$P_D$	150	mW
Junction Temperature	$T_J$	-55 to 150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to 150	$^{\circ}\text{C}$

➤ **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	$V_{O(on)}$	$I_O/I_I = 5mA/0.25mA$			0.3	V
Input Current	$I_I$	$V_I = 5V$			3.6	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$			0.1	$\mu A$
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

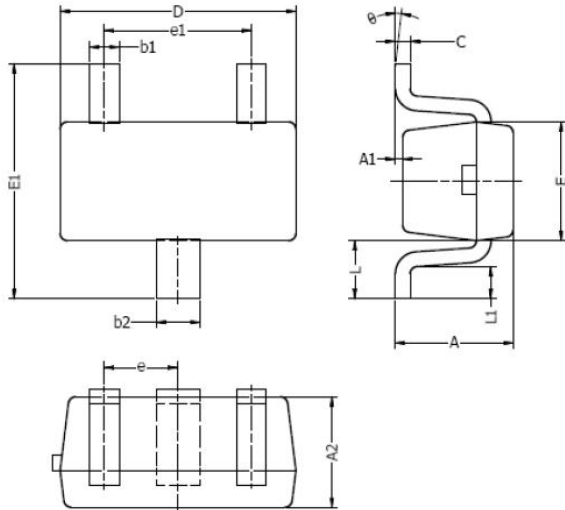


## ➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

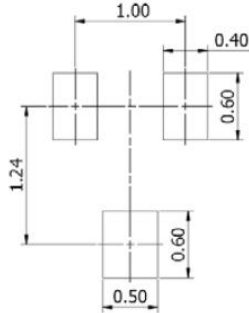


## ➤ Package Information

### SOT-523



Typical Soldering Pattern:



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.



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