



SSCP123GS8

PNP Type Digital Transistor (built-in resistors)

➤ Features

VCC	VIN	IO	R1	R2/R1 Typ.
-50V	-12~+5V	-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

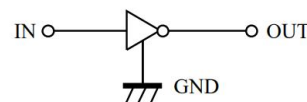
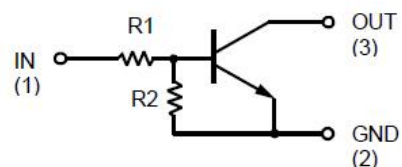
➤ Ordering Information

Device	Package	Shipping
SSCP123GS8	SOT-523	3000/Reel

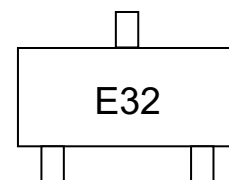
➤ Pin configuration



SOT-523



Circuit Diagram



Marking (Top View)



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

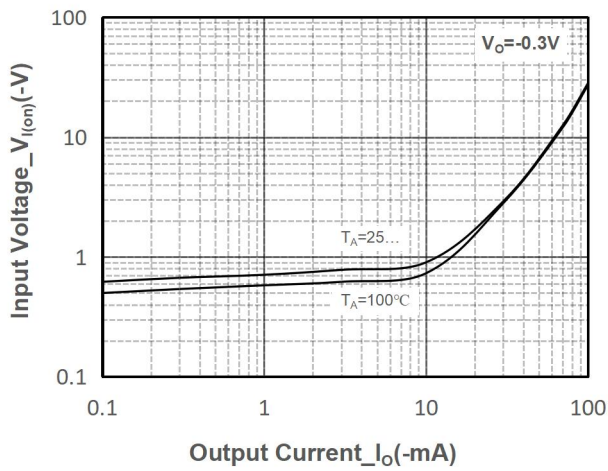
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-12 to +5	V
Output current	I_O	-100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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

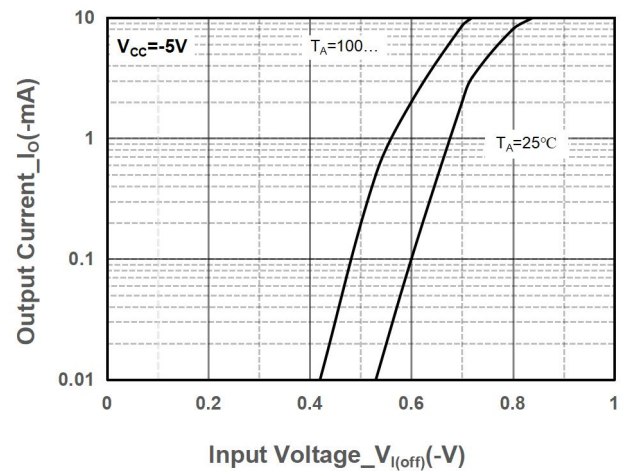
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = -5V, I_O = -0.1mA$	-0.5			V
	$V_{I(on)}$	$V_{CC} = -0.3V, I_O = -5mA$			-1.1	V
Output Voltage	$V_{O(on)}$	$I_O/I_I = -5mA/-0.25mA$			-0.3	V
Input Current	I_I	$V_I = -5V$			-3.6	mA
Output Current	$I_{O(off)}$	$V_{CC} = -50V, V_I = 0V$			-0.5	μA
DC Current Gain	G_1	$V_O = -5V, I_O = -10mA$	80			
Input Resistance	R_1		1.54	2.2	2.83	$k\Omega$
Resistance Ration	R_2/R_1		17	21	26	
Transition Frequency	f_T	$V_O=-10V, I_O=-5mA, f=100MHz$		250		MHz



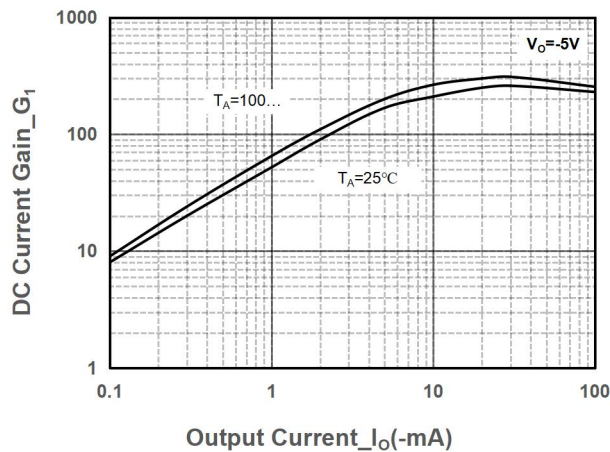
➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



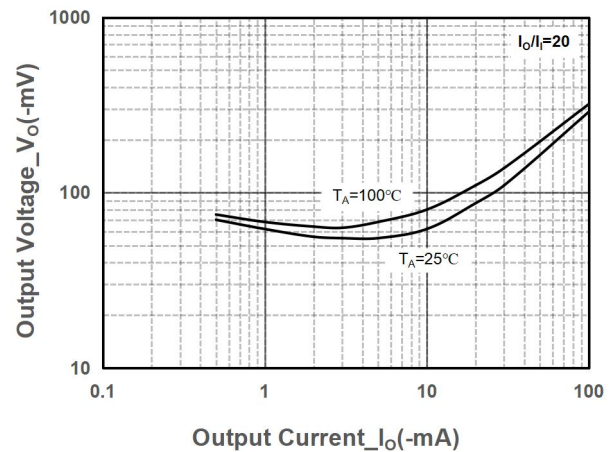
Input Voltage vs. Output Current



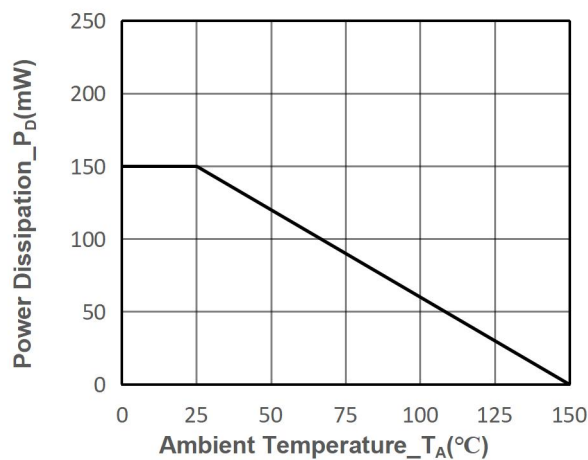
Output Current vs. Input Voltage



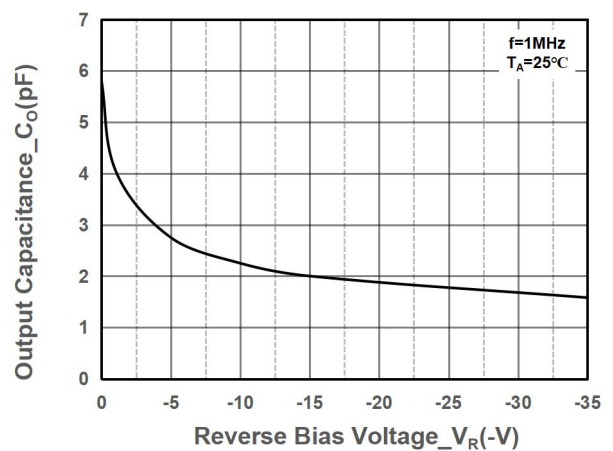
DC Current Gain vs. Output Current



Output Voltage vs. Output Current



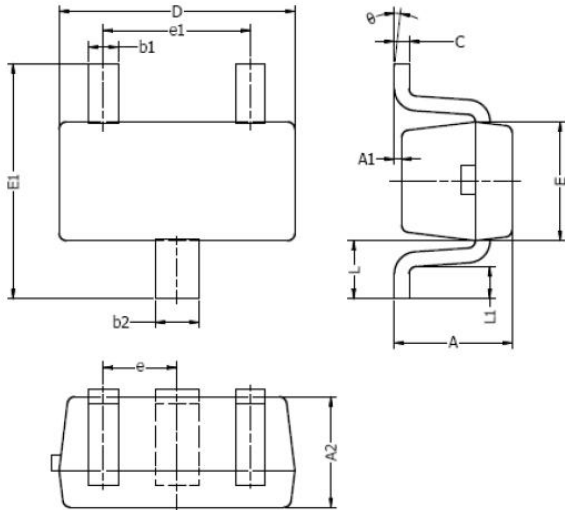
Power derating vs. Ambient temperature



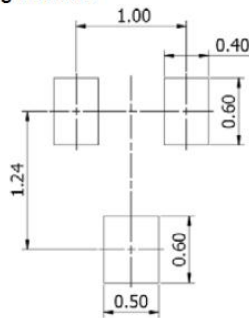
Output Capacitance vs. Reverse Voltage

➤ 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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