SSCN113ZGS8

NPN Type Digital Transistor (built-in resistors)

➢ Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-5~+10V	100mA	1KΩ	10

➢ 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

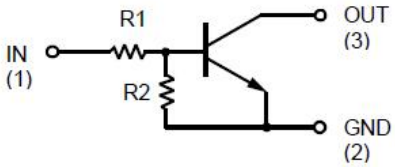
- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

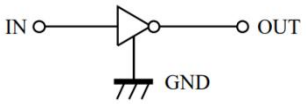
➢ Ordering Information

Device	Package	Shipping
SSCN113ZGS8	SOT-523	3000/Reel

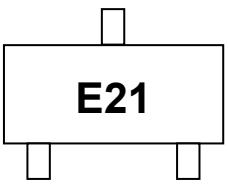
➢ Pin configuration

SOT-523





Circuit Diagram



Marking (Top View)

➢ Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

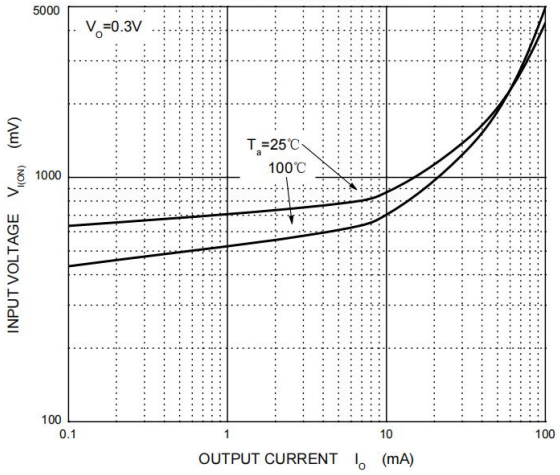
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{CN}	-5 to +10	V
Output current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

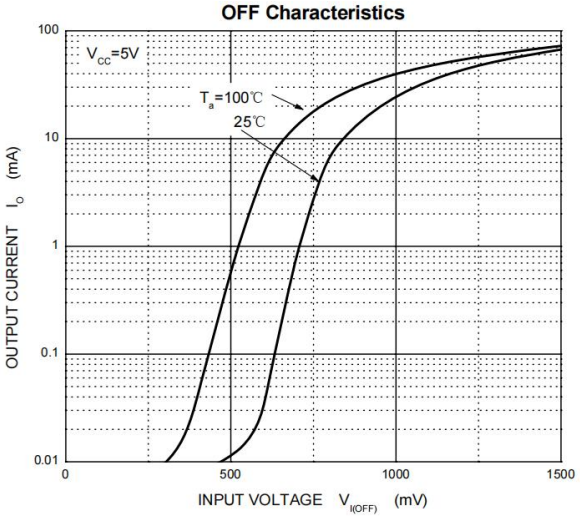
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = 5V, I_O = 0.1mA	0.3			V
	$V_{I(on)}$	V_{CC} = 0.3V, I_O = 20mA			3	V
Output Voltage	$V_{O(on)}$	I_O/I_I = 10mA/0.5mA			0.3	V
Input Current	I_I	V_I = 5V			7.2	mA
Output Current	$I_{O(off)}$	V_{CC} = 50V, V_I = 0V			0.5	uA
DC Current Gain	G_1	V_O = 5V, I_O = 10mA	33			
Input Resistance	R_1		0.7	1.0	1.3	kΩ
Resistance Ration	R_2/R_1		8	10	12	
Transition Frequency	f_T	V_{CE} = 10V, I_E = -5mA, f = 100MHz		250		MHz

➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)

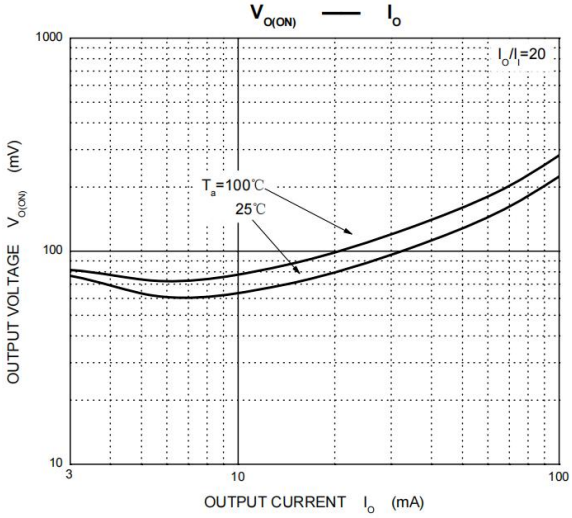
ON Characteristics



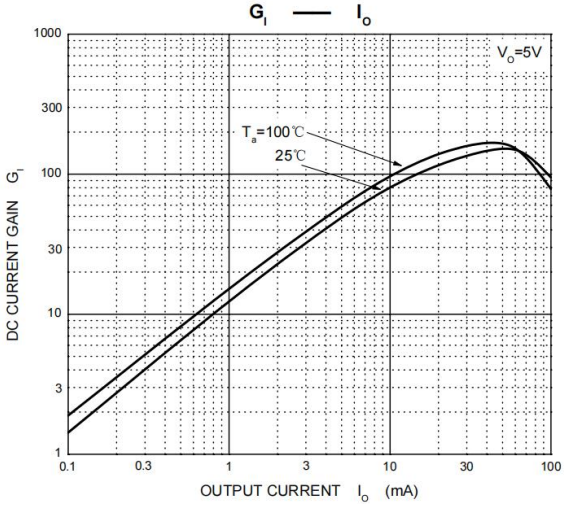
OFF Characteristics



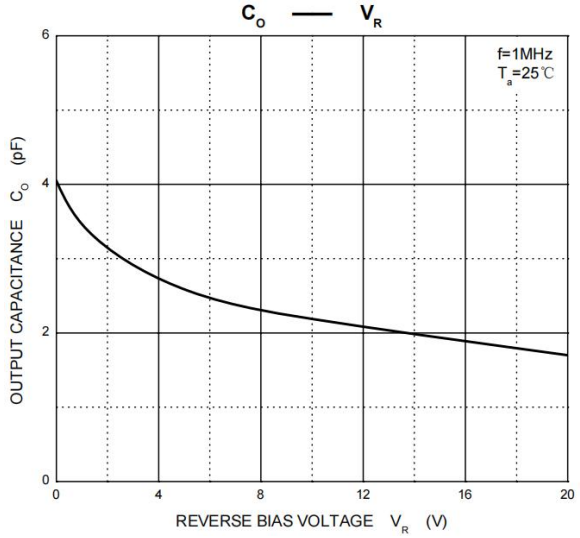
$V_{O(ON)}$ — I_O



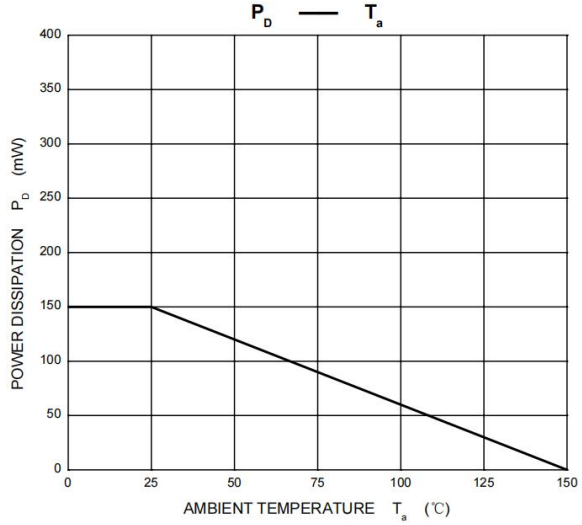
G_I — I_O



C_O — V_R

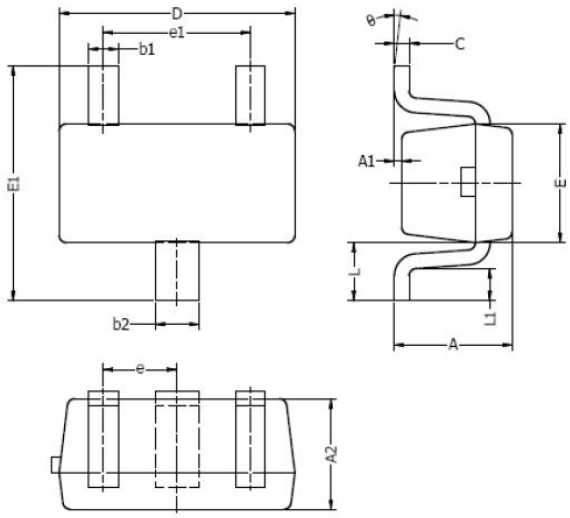


P_D — T_a



➢ Package Information

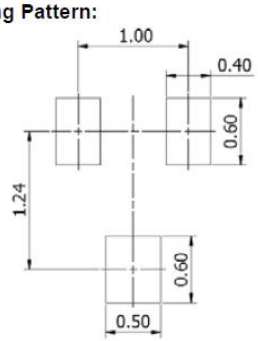
SOT-523



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.

Typical Soldering Pattern:



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