



SSCN143XGS6

NPN Type Digital Transistor (built-in resistors)

➤ Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-7~+20V	100mA	4.7kΩ	2.1

➤ 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.

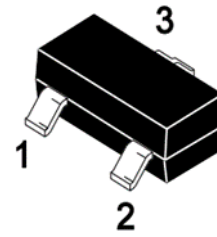
➤ Applications

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

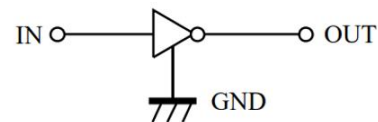
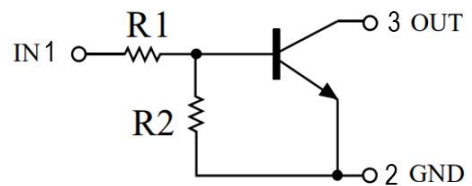
➤ Ordering Information

Device	Package	Shipping
SSCN143XGS6	SOT-23	3000/Reel

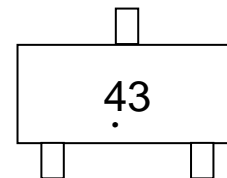
➤ Pin configuration



SOT-23



Circuit Diagram



Marking (Top View)



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

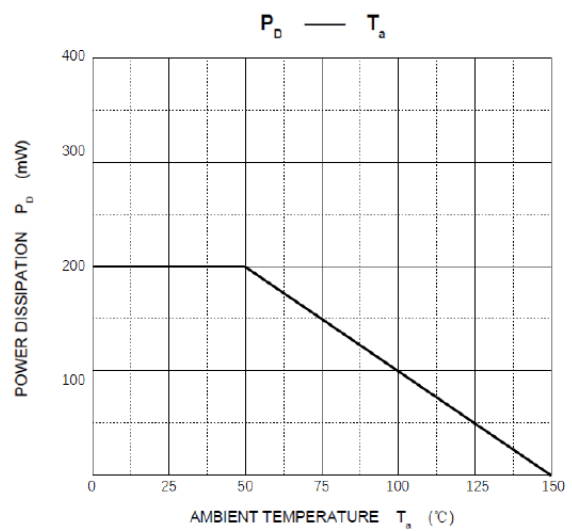
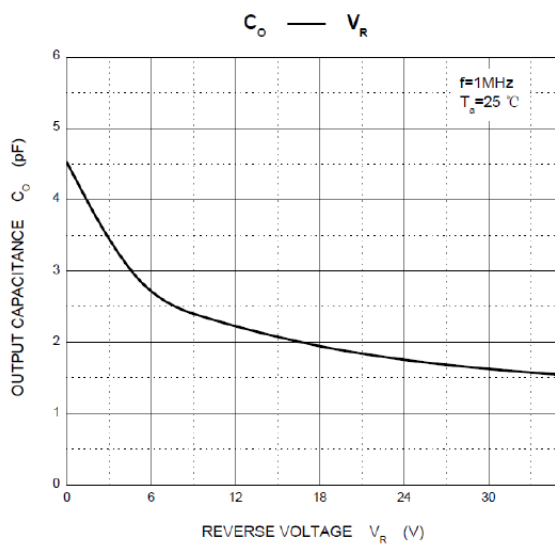
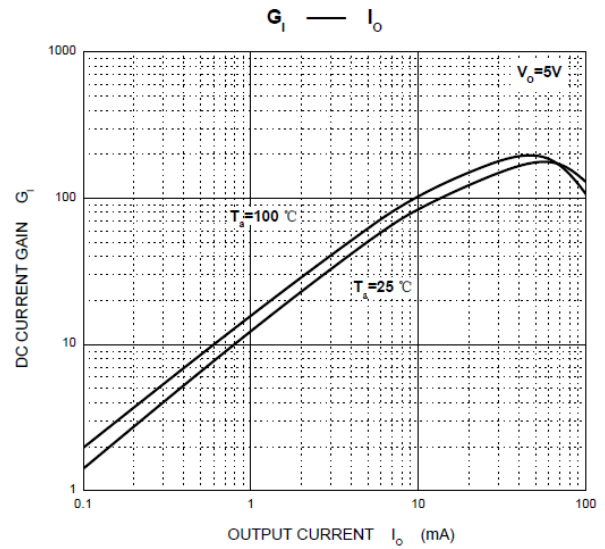
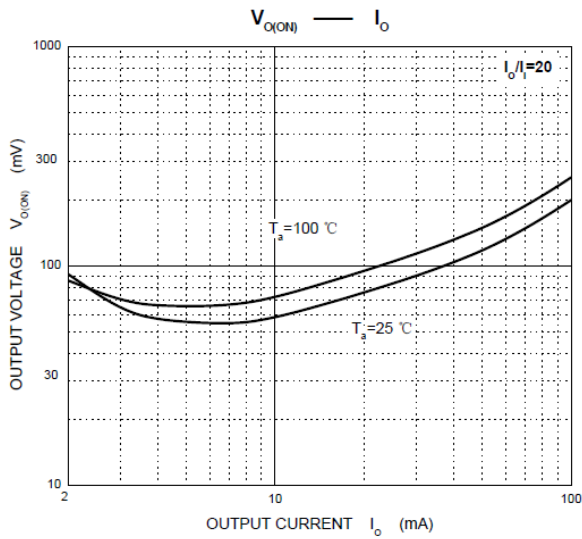
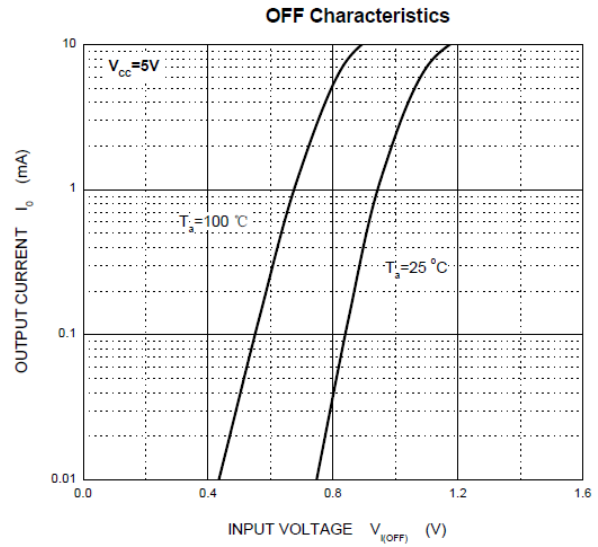
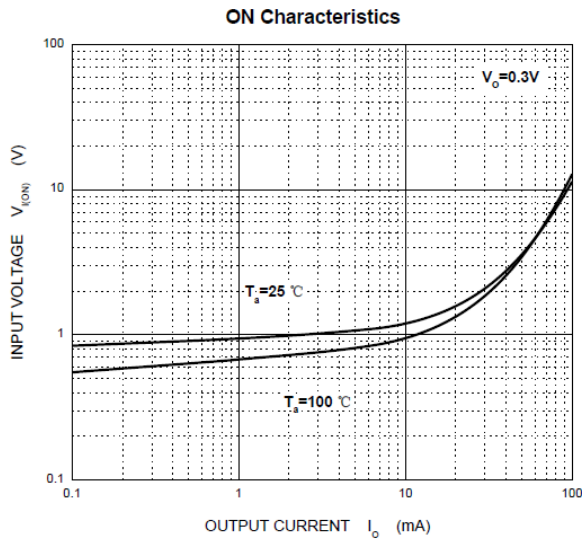
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{CN}	-7 to +20	V
Output current	I_o	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = 5V, I_o = 0.1mA$	0.3			V
	$V_{I(on)}$	$V_{CC} = 0.3V, I_o = 20mA$			2.5	V
Output Voltage	$V_{O(on)}$	$I_o/I_i = 10mA/0.5mA$		0.1	0.3	V
Input Current	I_i	$V_i = 5V$			1.8	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_i = 0V$			0.5	μA
DC Current Gain	G_1	$V_o = 5V, I_o = 10mA$	30			
Input Resistance	R_1		3.29	4.7	6.11	$\text{K}\Omega$
Resistance Ration	R_2/R_1		1.7	2.1	2.6	
Transition Frequency	f_T	$V_o = 10V, I_o = 5mA, f = 100\text{MHz}$		250		MHz



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

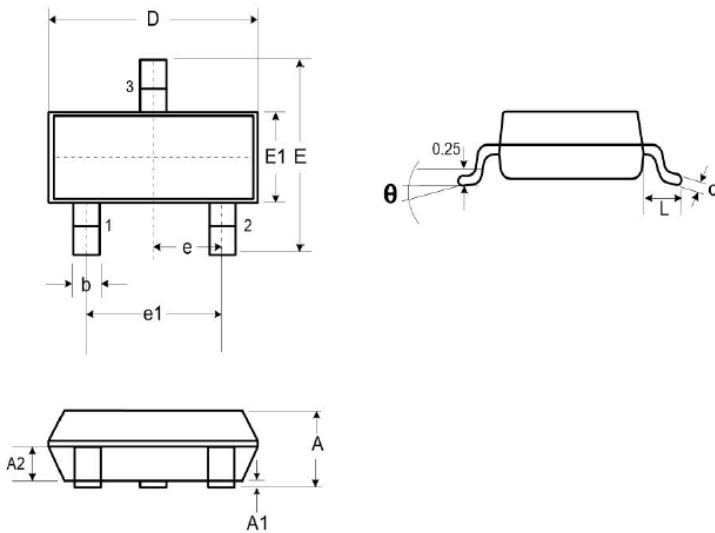




➤ **Package Information**

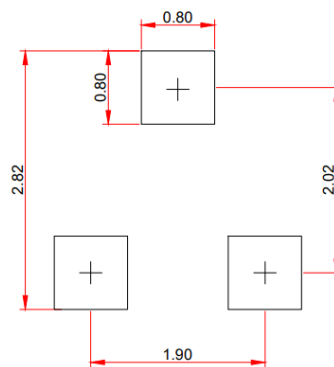
● **Mechanical Data**

SOT-23



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	0.95		
e1	1.90		
L	0.40	0.50	0.60
L1	0.55		
N	3		
θ	0°	-	8°

● **Recommended Pad outline (Unit: mm)**





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