SSCN143EGS6

NPN Type Digital Transistor (built-in resistors)

➢ Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-10~+30V	100mA	4.7kΩ	1.0

➢ 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.

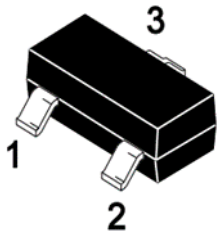
➢ Applications

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

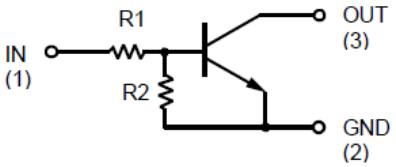
➢ Ordering Information

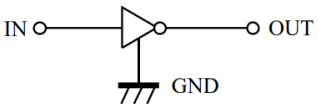
Device	Package	Shipping
SSCN143EGS6	SOT-23	3000/Reel

➢ Pin configuration

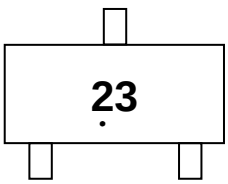


SOT-23





Circuit Diagram



Marking (Top View)

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

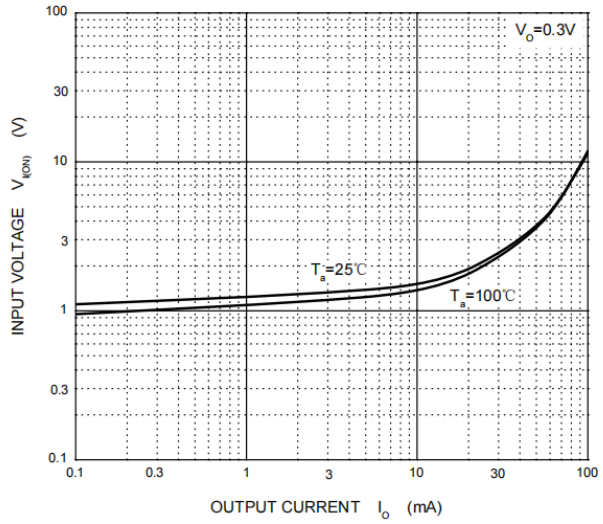
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10 to +30	V
Output current	I_O	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

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

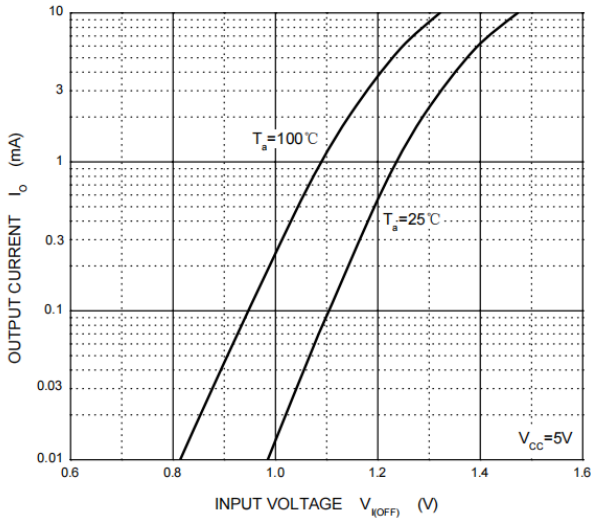
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = 5V, I_O=0.1mA	0.5			V
	$V_{I(on)}$	V_{CC} = 0.3V, I_O = 20mA			3	V
Output Voltage	$V_{O(on)}$	I_O/I_I = 10mA/0.5mA			0.3	V
Input Current	I_I	V_I = 5V			1.8	mA
Output Current	$I_{O(off)}$	V_{CC} = 50V, V_I = 0V			0.5	uA
DC Current Gain	G_1	V_O = 5V, I_O =10mA	20			
Input Resistance	R_1		3.29	4.7	6.11	KΩ
Resistance Ration	R_2/R_1		0.8	1.0	1.2	
Transition Frequency	f_T	V_O=10V,I_O=5mA,f=100MHz		250		MHz

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

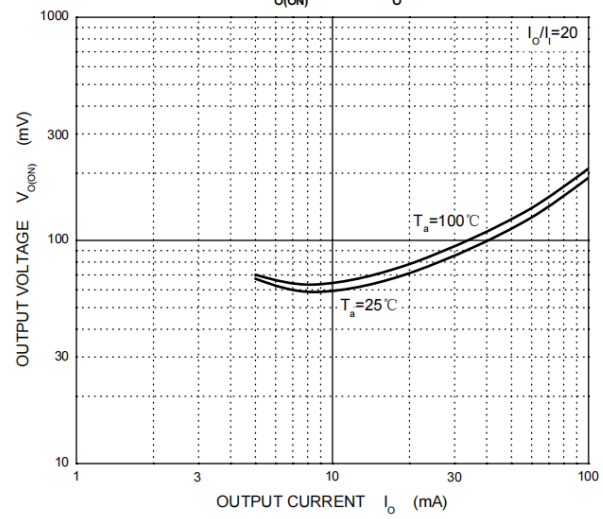
ON Characteristics



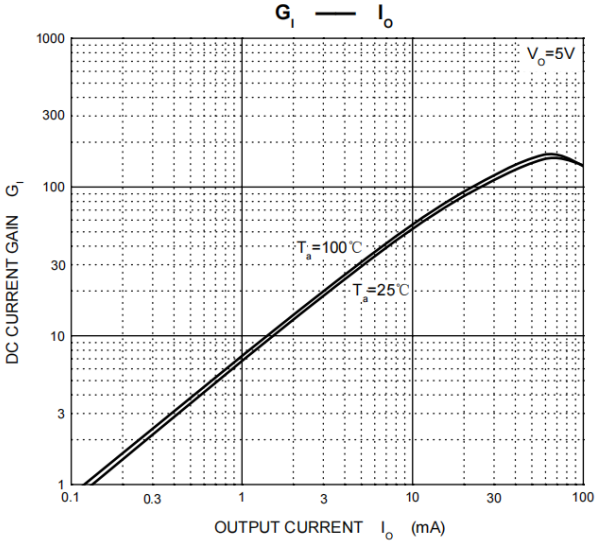
OFF Characteristics



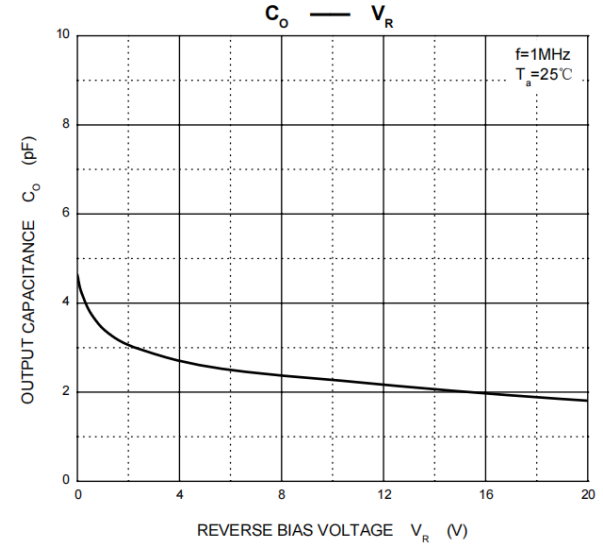
$V_{O(ON)}$ — I_O



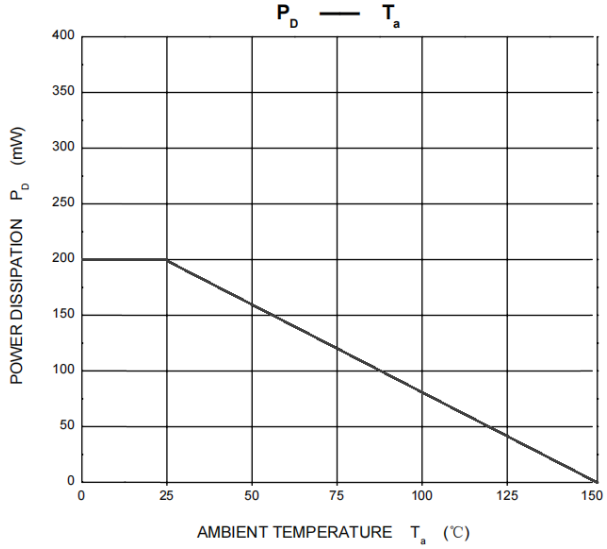
G_I — I_O



C_O — V_R



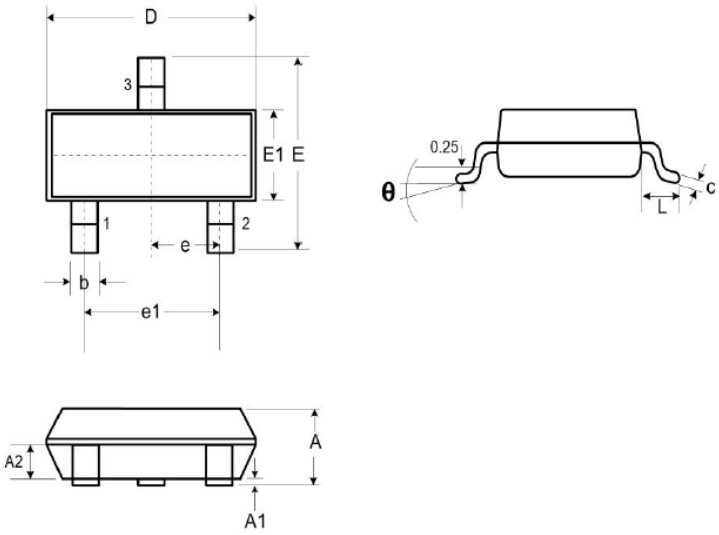
P_D — T_a



➢ Package Information

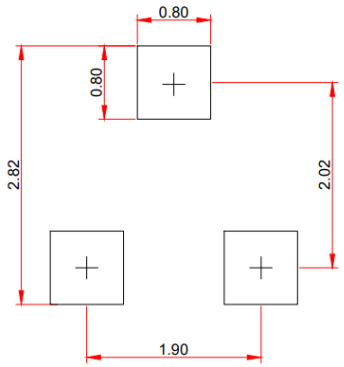
- **Mechanical Data**

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**



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