



SSCN114GS6

NPN Type Digital Transistor (built-in resistors)

➤ Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-6~+40V	70mA	10kΩ	4.7

➤ 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.

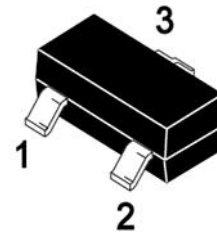
➤ Applications

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

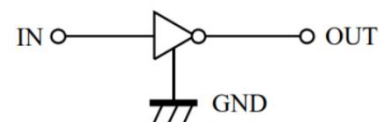
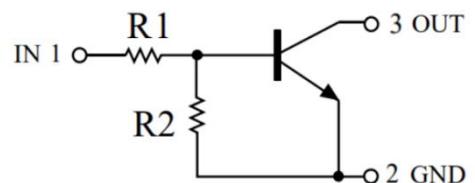
➤ Ordering Information

Device	Package	Shipping
SSCN114GS6	SOT-23	3000/Reel

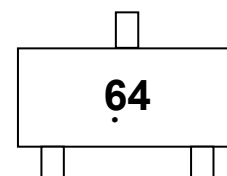
➤ Pin configuration



SOT-23



Circuit Diagram



Marking (Top View)



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

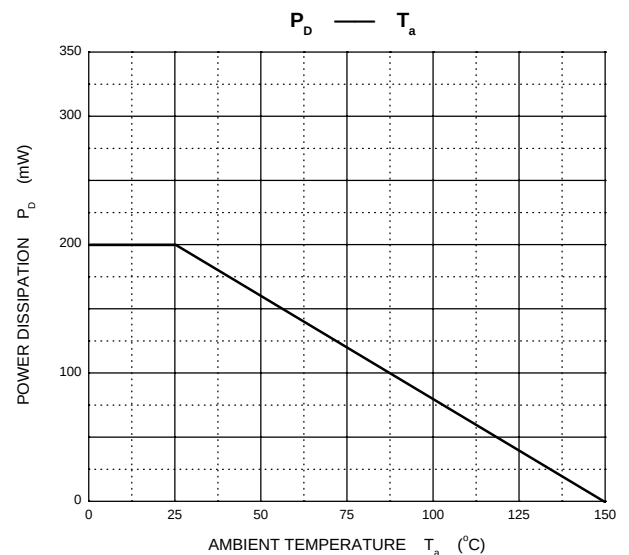
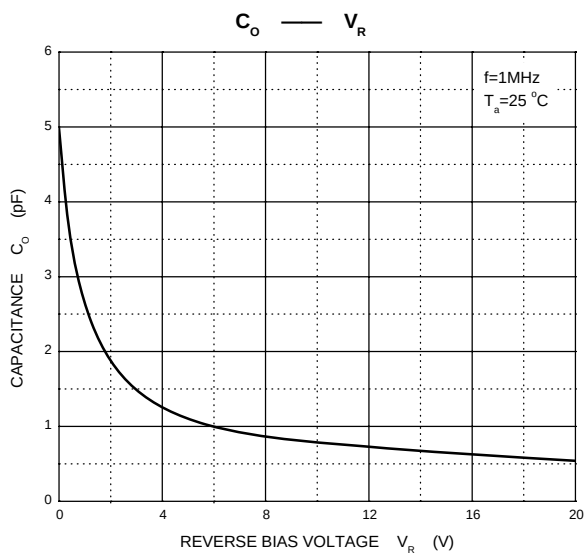
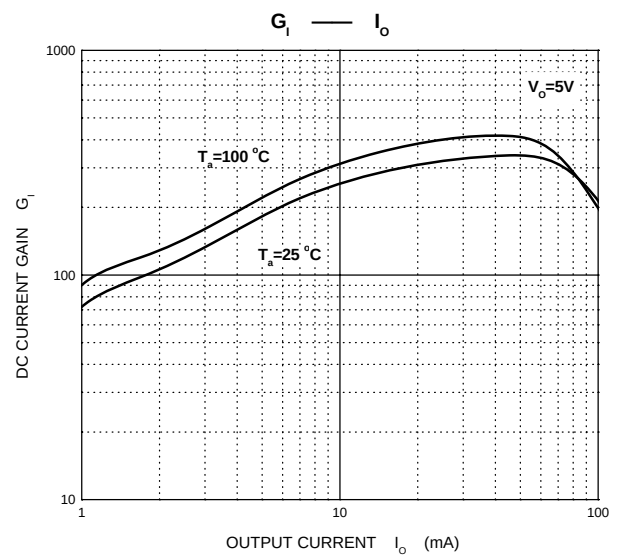
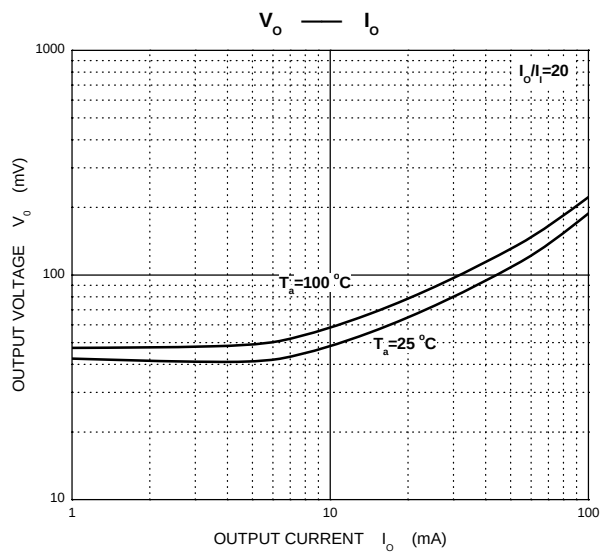
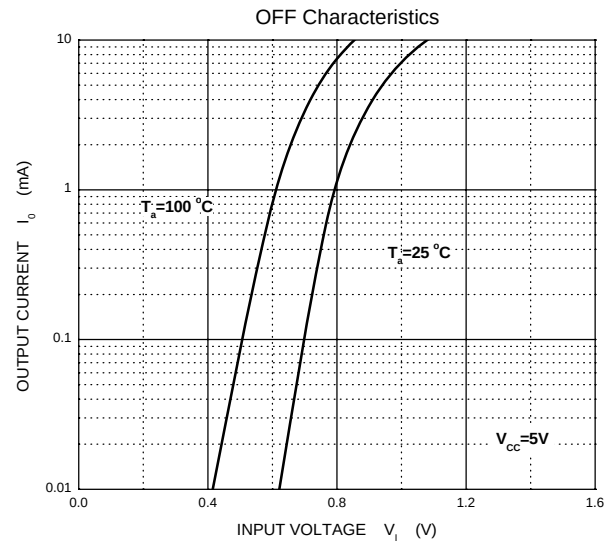
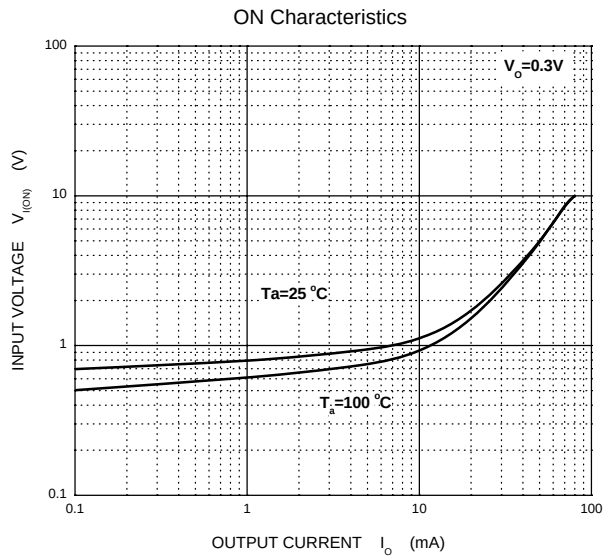
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-6 to +40	V
Output current	I_O	70	mA
Peak Collector Current	I_{CM}	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

➤ **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
	$V_{I(on)}$	$V_{CC} = 0.3V, I_O = 1mA$			1.4	V
Output Voltage	$V_{O(on)}$	$I_O/I_I = 5mA/0.25mA$			0.3	V
Input Current	I_I	$V_I = 5V$			0.88	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$			0.5	μA
DC Current Gain	G_1	$V_O = 5V, I_O = 5mA$	68			
Input Resistance	R_1		7	10	13	$k\Omega$
Resistance Ration	R_2/R_1		3.7	4.7	5.7	
Transition Frequency	f_T	$V_O = 10V, I_O = 5mA, f = 100MHz$		250		MHz

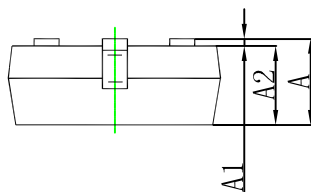
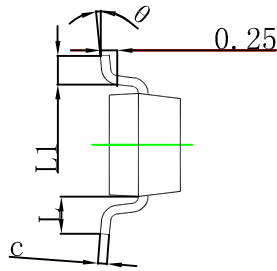
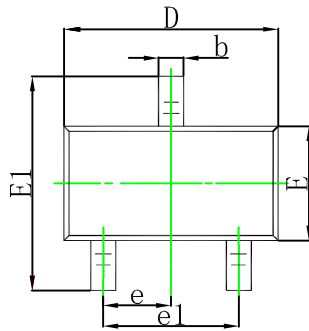


➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



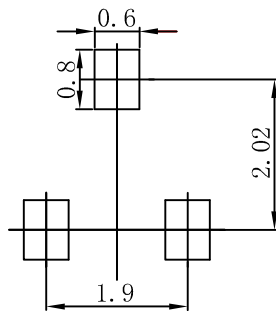


● Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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