SSCN144EGS7

NPN Type Digital Transistor (built-in resistors)

➢ Features

VCC	VIN	IO	R1	R2/R1 Typ.
50V	-10~+40V	30mA	47KΩ	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.

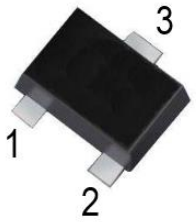
➢ Applications

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

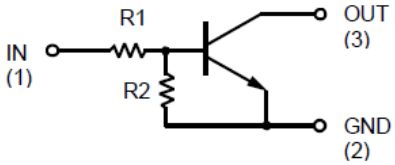
➢ Ordering Information

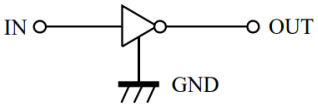
Device	Package	Shipping
SSCN144EGS7	SOT-323	3000/Reel

➢ Pin configuration

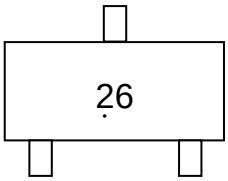


SOT-323





Circuit Diagram



Marking (Top View)

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

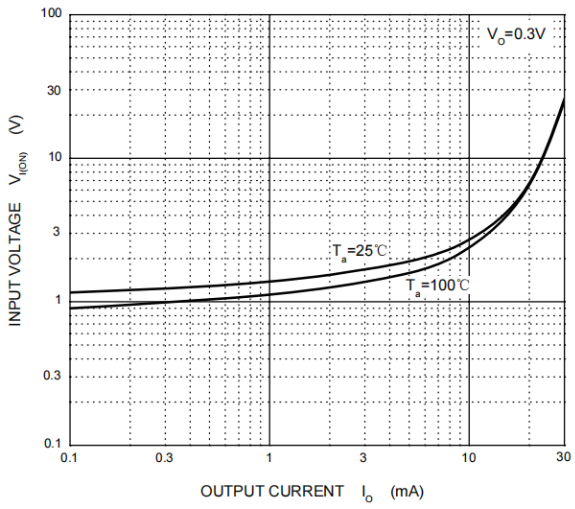
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{CN}	-10 to +40	V
Output current	I_O	30	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

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

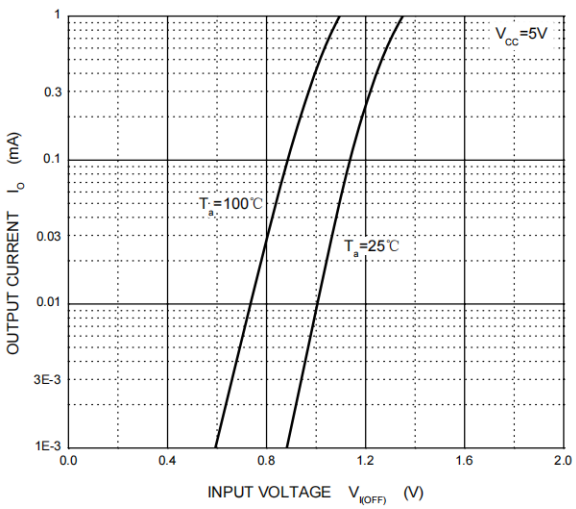
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = 5V, I_O = 100uA	0.5			V
	$V_{I(on)}$	V_{CC} = 0.3V, I_O = 2mA			3	V
Output Voltage	$V_{O(on)}$	I_O/I_I = 10mA/0. 5mA			0.3	V
Input Current	I_I	V_I = 5V			0.18	mA
Output Current	$I_{O(off)}$	V_{CC} = 50V, V_I = 0V			0.5	uA
DC Current Gain	G_1	V_O = 5V, I_O = 5mA	68			
Input Resistance	R_1		32.9	47	61.1	KΩ
Resistance Ration	R_2/R_1		0.8	1.0	1.2	
Transition Frequency	f_T	V_{CE}=10V, I_E=-5mA, f=100MHz		250		MHz

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

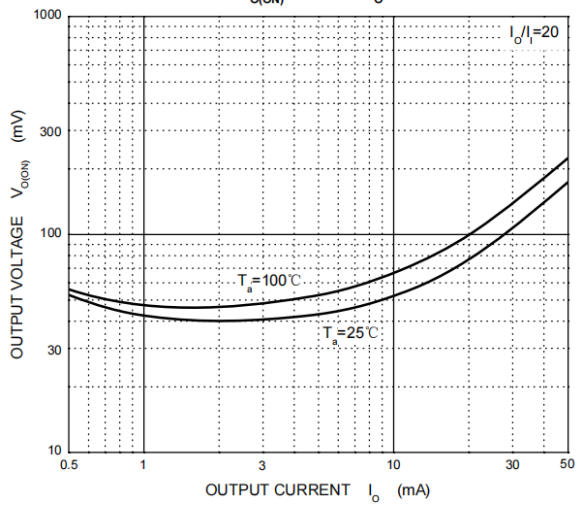
ON Characteristics



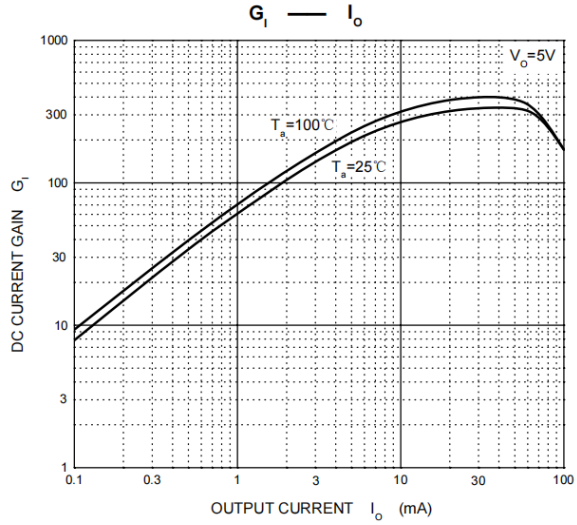
OFF Characteristics



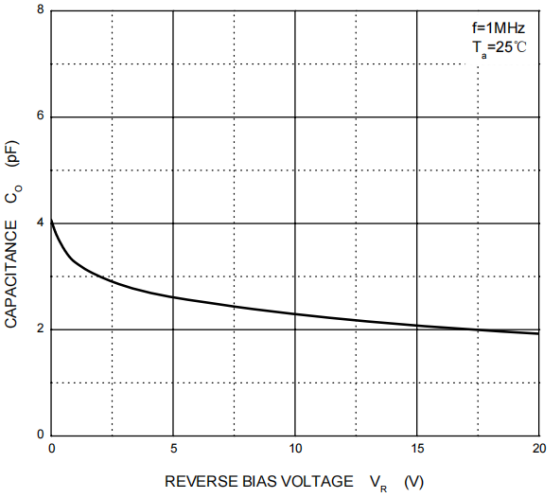
$V_{O(ON)}$ — I_O

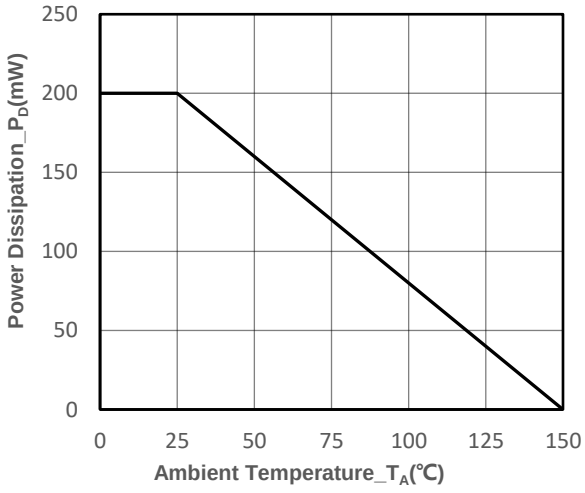


G_I — I_O

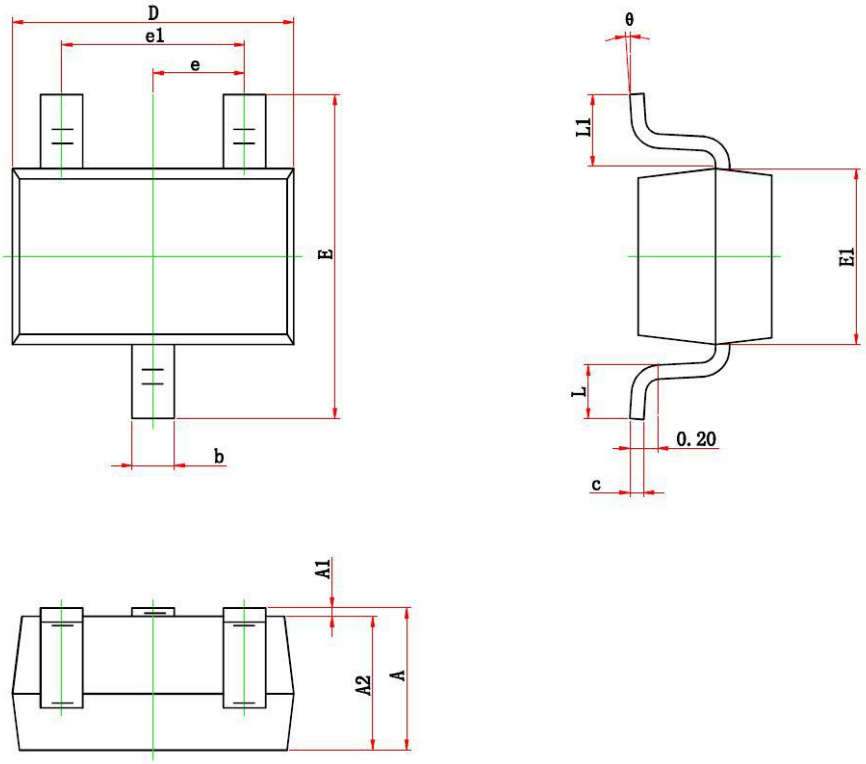


C_O — V_R





➢ Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	2.150	2.450	0.085	0.096
E1	1.150	1.350	0.045	0.053
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.260	0.460	0.010	0.018
L1	0.525 REF.		0.021 REF.	
θ	0°	8°	0°	8°

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