SSCP143GN5

Digital Transistor(built-in resistors)

➢ Features

VCC	VIN	IO	R1	R2/R1
-50V	-30~+5V	-100mA	4.7kΩ	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.

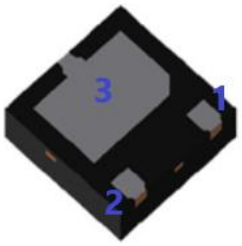
➢ Applications

- Inverter
- Interface
- Driver

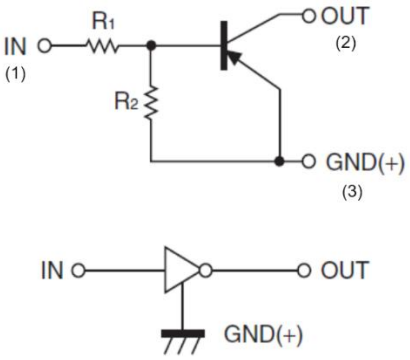
➢ Ordering Information

Device	Package	Shipping
SSCP143GN5	DFN1616-3L	3000/Reel

➢ Pin configuration



DFN1616-3L



Circuit Diagram

Marking(Top View)

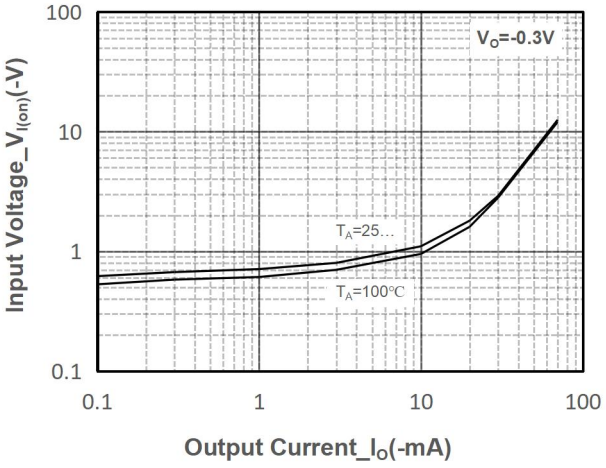
➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-30~+5	V
Output current	I_O	-100	mA
Power Dissipation	P_D	100	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

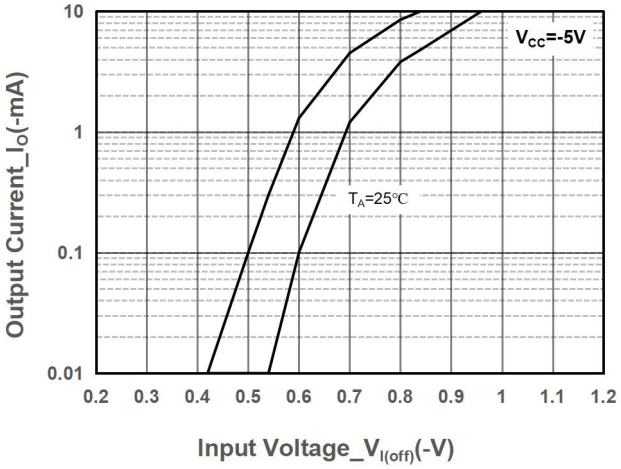
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I\ (off)}$	V_{CC}=-5V, I_O=-100μA	-0.5			V
	$V_{I\ (on)}$	V_O=-0.3V, I_O=-5mA			-1.3	V
Output Voltage	$V_{ON\ (on)}$	I_O/I_I=-5mA/-0.25mA			-0.3	V
Input Current	I_I	V_I=-5V			-1.8	mA
Output Current	$I_{O\ (off)}$	V_{CC}=-50V, V_I=0			-0.5	μA
DC Current Gain	G_1	I_C=-5V, I_O=-10mA	80			
Input resistance	R_1		3.3	4.7	6.1	kΩ
Resistance ratio	R_2/R_1		8	10	12	
Transition frequency	f_T	V_O=-10V, I_O=-5mA f=100MHz		250		MHz

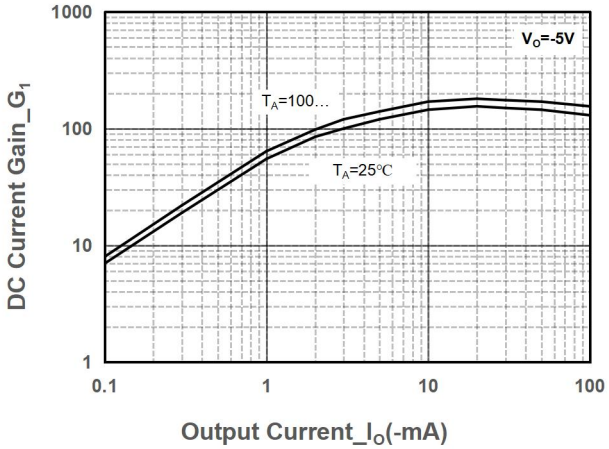
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



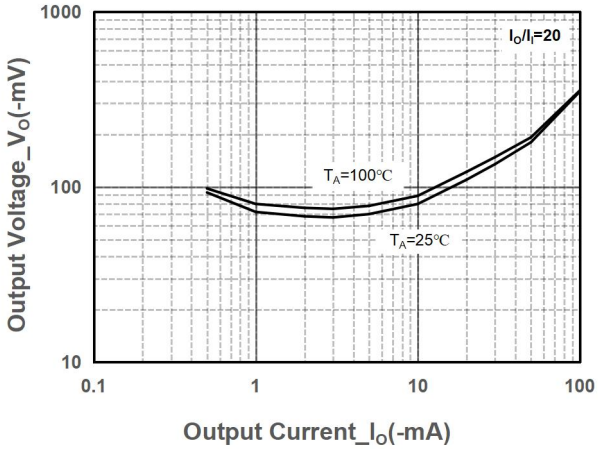
Input Voltage vs. Output Current



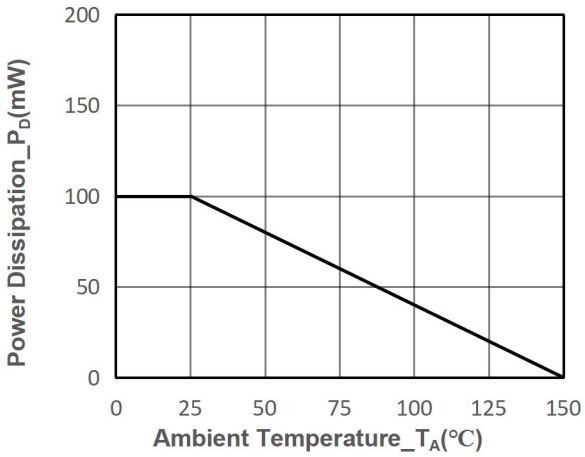
Output Current vs. Input Voltage



DC Current Gain vs. Output Current

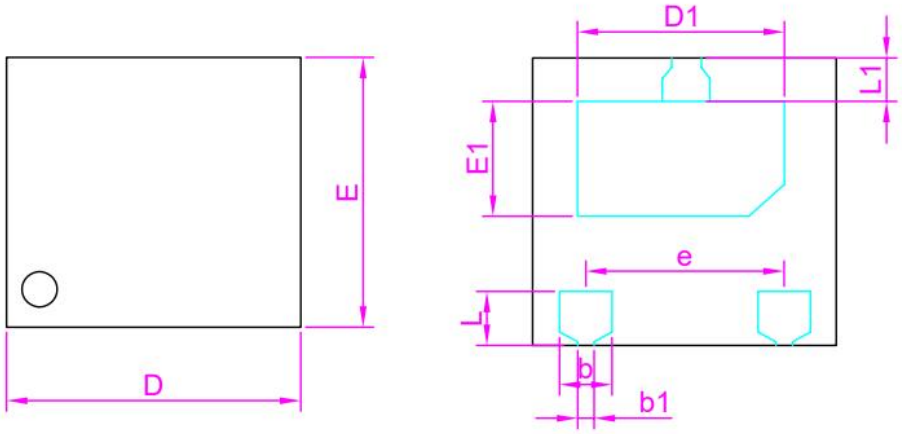


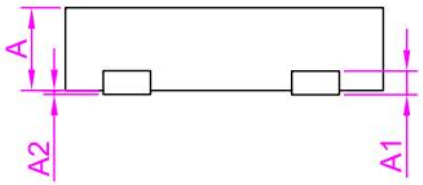
Output Voltage vs. Output Current



Power derating vs. Ambient temperature

➢ Package Information





DIM	Millimeters		
	Min.	Typ.	Max.
A	0.50	0.55	0.60
D	1.55	1.60	1.65
E	1.55	1.60	1.65
b	0.35	0.40	0.45
L	0.35	0.40	0.45
e	1.00BSC		
D1	1.15	1.20	1.25
E1	0.50	0.55	0.65
b1	0.15	0.20	0.25
L1	0.20	0.25	0.30
A1	0.15BSC		
A2	0.00	0.025	0.05

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