



## SSCN143GN5

### Digital Transistor(built-in resistors)

#### ➤ Features

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

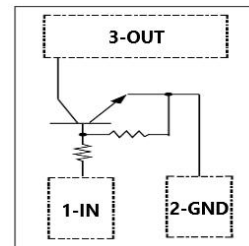
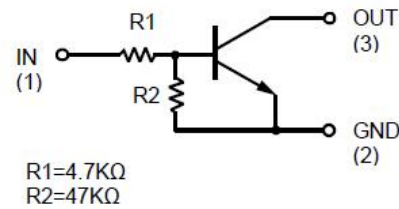
#### ➤ Applications

- Inverter
- Interface
- Driver

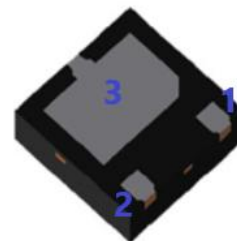
#### ➤ Ordering Information

Device	Package	Shipping
SSCN143GN5	DFN1616	3000/Reel

#### ➤ Pin configuration



Top view



DFN1616



Marking



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

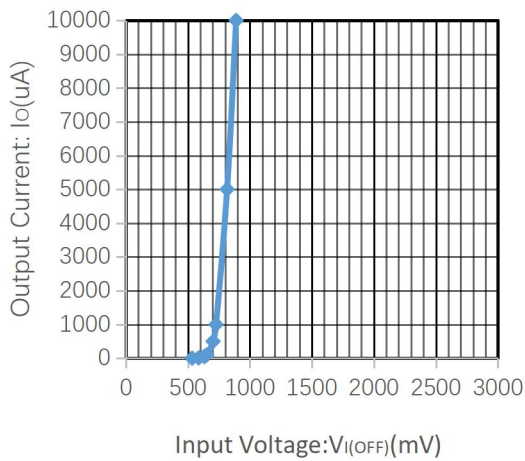
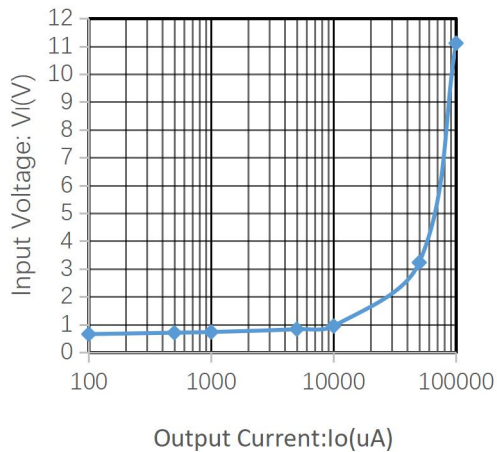
Symbol	Parameter	Ratings	Unit
$V_{CC}$	Supply Voltage	50	V
$V_{IN}$	Input Voltage	-5 to +30	V
$I_O$	Output current	100	mA
$I_{C(MAX.)}$		100	mA
$P_D$	Power Dissipation	150	mW
$T_J$	Operation junction temperature	-55 to 150	$^{\circ}\text{C}$
$T_{STG}$	Storage temperature range	-55 to 150	$^{\circ}\text{C}$

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

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{I(off)}$	Input voltage	$V_{CC}=5V$ , $I_O=100\mu A$	0.5		1	V
$V_{I(on)}$		$V_{CC}=0.3V$ , $I_O=5mA$		1		V
$V_{O(on)}$	Output voltage	$I_O/I_I=5mA/0.25mA$		0.1	0.3	V
$I_I$	Input current	$V_I=5V$			1.8	mA
$I_{O(off)}$	Output current	$V_{CC}=50V$ , $V_I=0V$			0.5	$\mu A$
$G_1$	DC current gain	$V_O=5V$ , $I_O=10mA$	80			
$R_1$	Input resistance		3.29	4.7	6.11	$K\Omega$
$R_2/R_1$	Resistance ration		8	10	12	$K\Omega$
$f_T$	Transition frequency	$V_{CE}=10V, I_E=-5mA, f=100MHz$		250		MHz

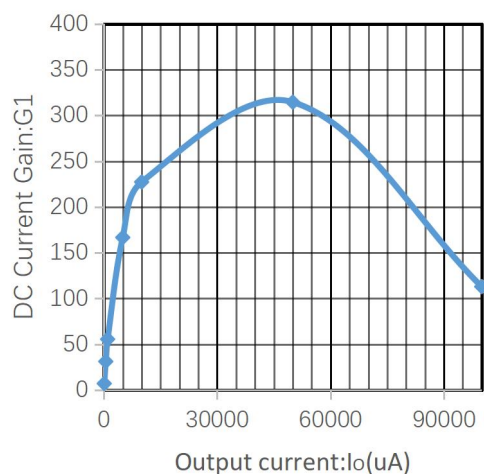


➤ **Typical Characteristics**( $T_A=25^\circ\text{C}$  unless otherwise noted)

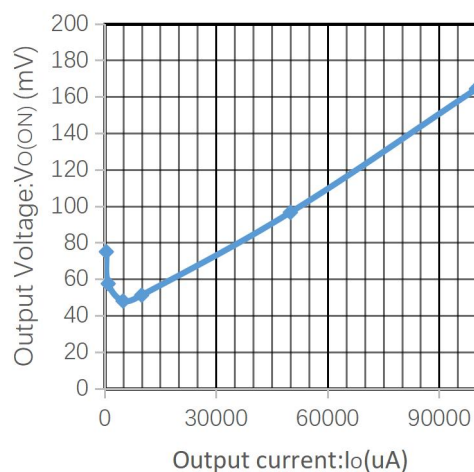


**Fig 1.**Input voltage vs. output current  
@ $V_o=0.3\text{V}$ (ON characteristics)

**Fig 2.**Output current vs. input voltage  
@ $V_{cc}=5\text{V}$ (OFF characteristics)

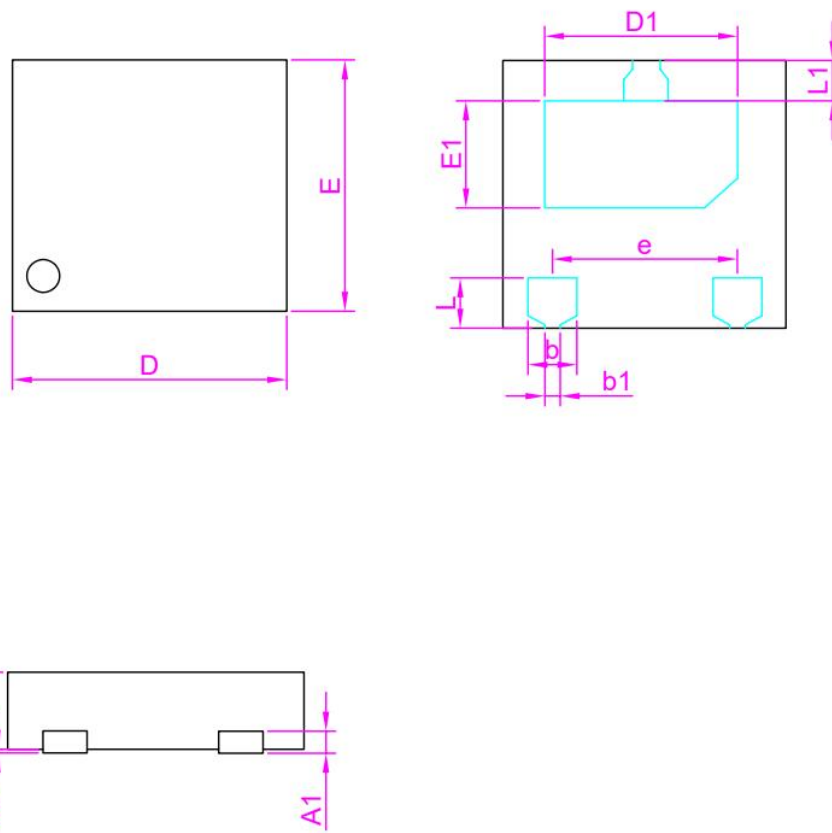


**Fig 3.**DC current gain vs. output current  
@ $V_o=5\text{V}$



**Fig 4.**Output current vs. output voltage  
@ $I_o/I_i=20$

➤ **Package Information**





COMMON DIMENSION (MM)			
PKG	DFN1616-3L		
REF.	MIN.	NOM.	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



**DISCLAIMER**

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.