SSCN143GS8

NPN Type 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.

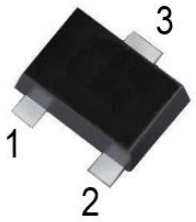
➢ Applications

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

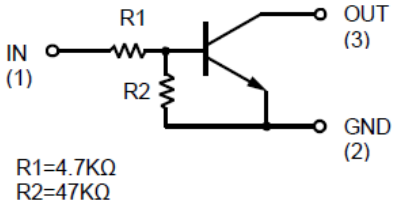
➢ Ordering Information

Device	Package	Shipping
SSCN143GS8	SOT-523	3000/Reel

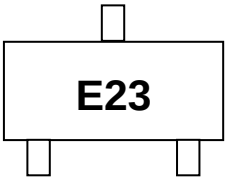
➢ Pin configuration



SOT-523



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}	-5 to +30	V
Output current	I_O	100	mA
Collector Power Dissipation	P_C	150	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=5mA			1.3	V
Output Voltage	$V_{O(on)}$	I_O/I_I=5mA/0.25mA		0.1	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	80			
Input Resistance	R_1		3.29	4.7	6.11	KΩ
Resistance Ration	R_2/R_1		8	10	12	KΩ
Transition Frequency	f_T	V_{CE}=10V,I_E=-5mA,f=100MHz		250		MHz

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

Fig.1 Input voltage vs. output current (ON characteristics)

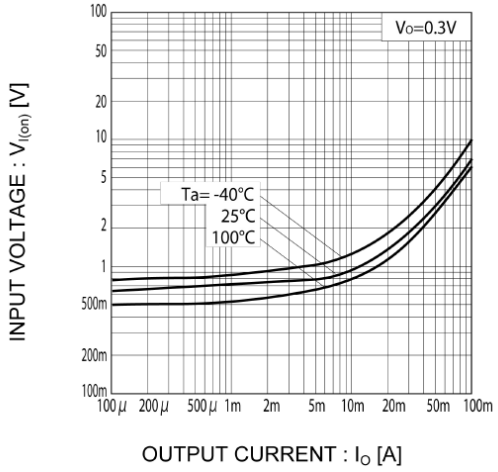


Fig.2 Output current vs. input voltage (OFF characteristics)

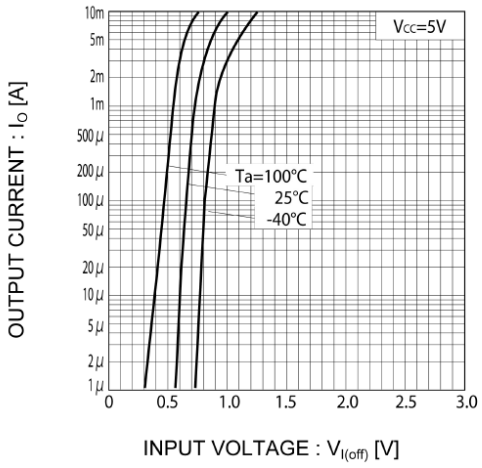


Fig.3 Output current vs. output voltage

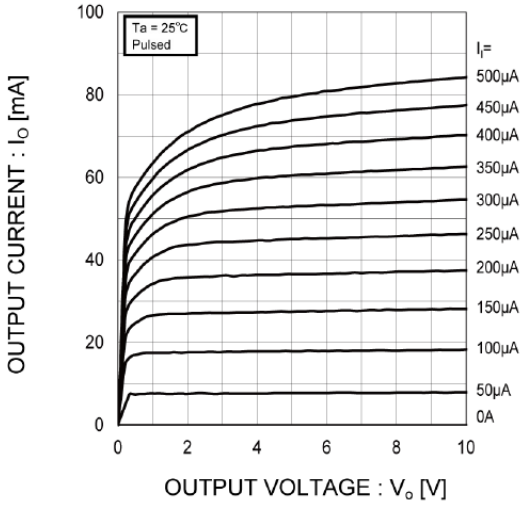


Fig.4 DC current gain vs. output current

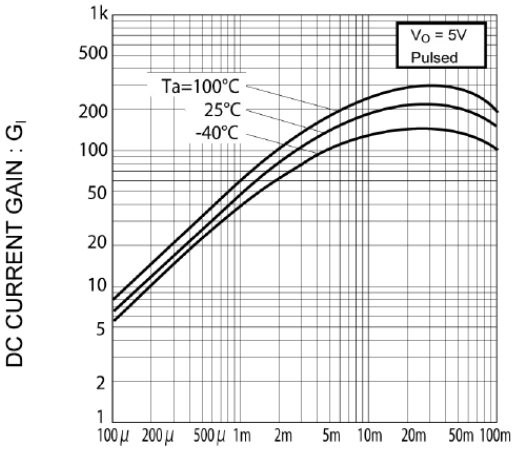
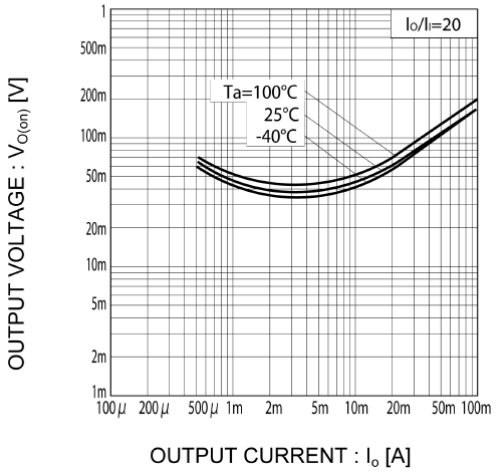
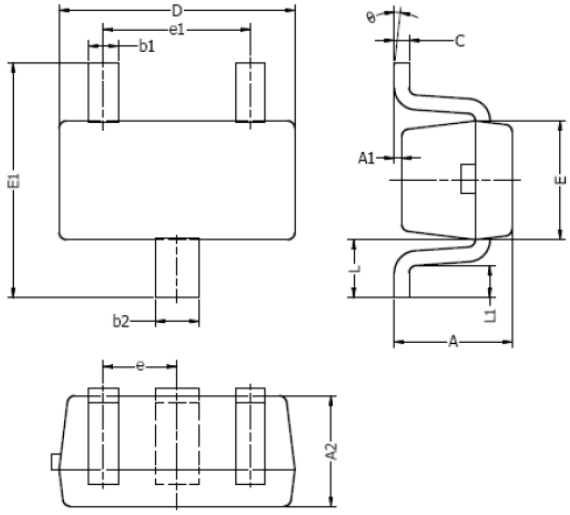


Fig.5 Output voltage vs. output current



- **Package Information**

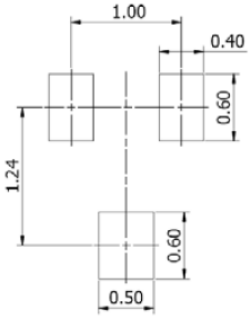
SOT-523



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0°	8°	0°	8°

NOTES:
1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

Typical Soldering Pattern:



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