



SSCN143GS6

NPN Type Digital Transistor (built-in resistors)

Features

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

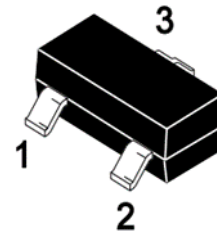
Applications

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

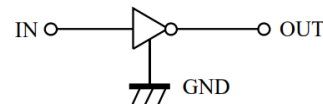
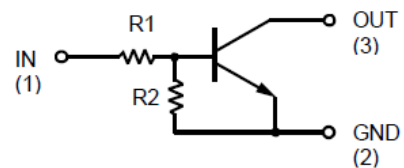
Ordering Information

| Device | Package | Shipping |
|------------|---------|-----------|
| SSCN143GS6 | SOT-23 | 3000/Reel |

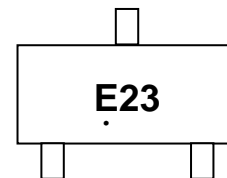
Pin configuration



SOT-23



Circuit Diagram



Marking (Top View)



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

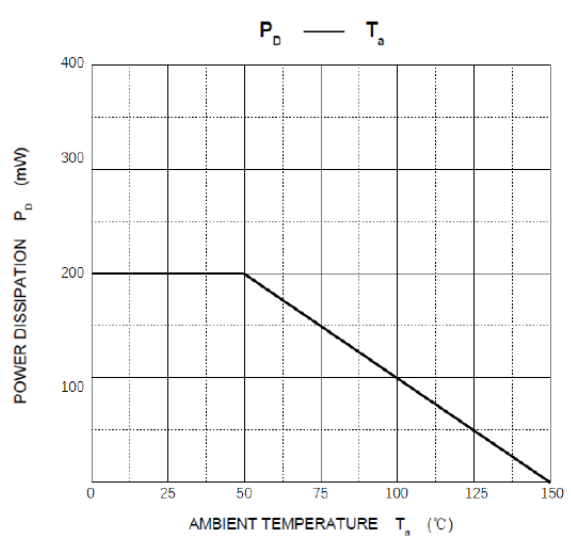
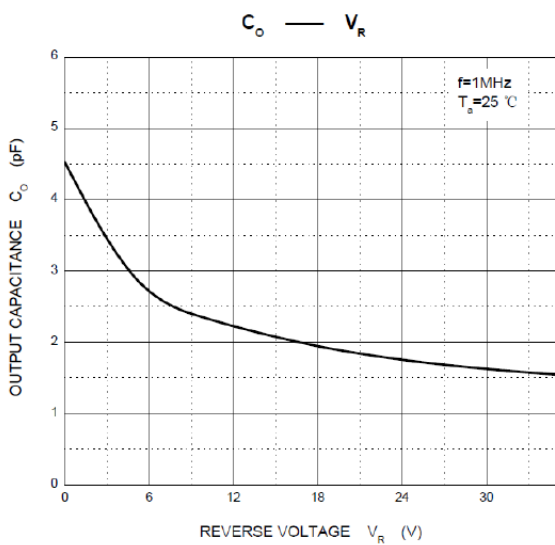
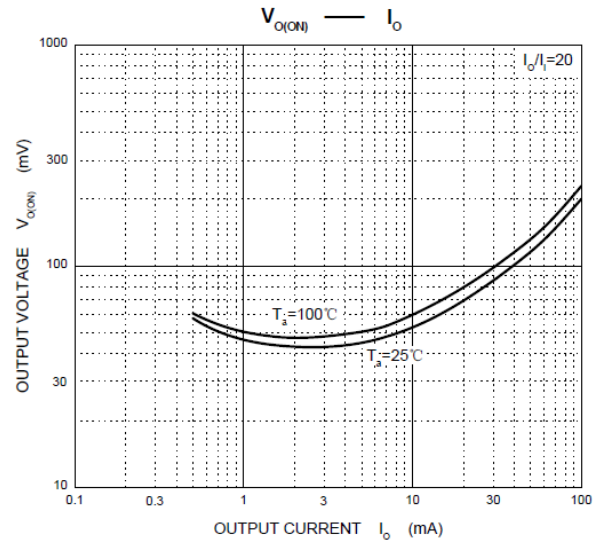
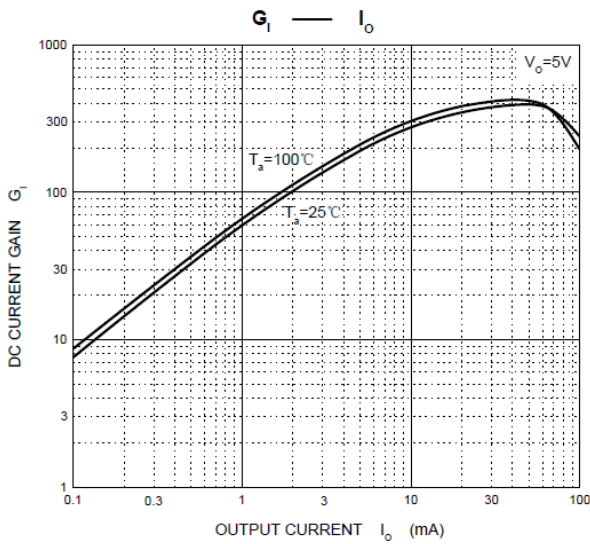
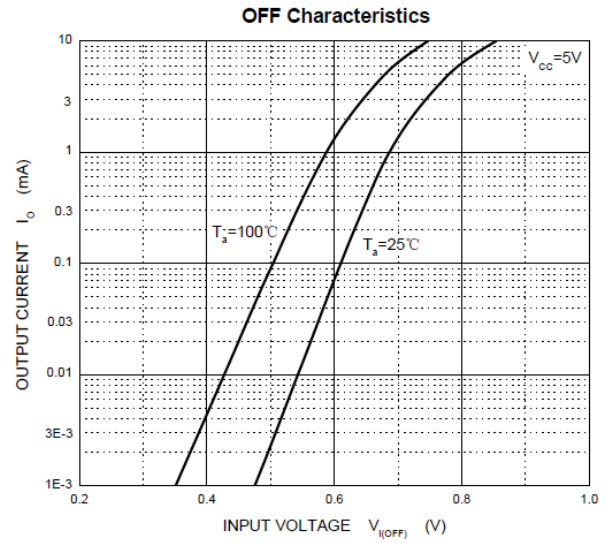
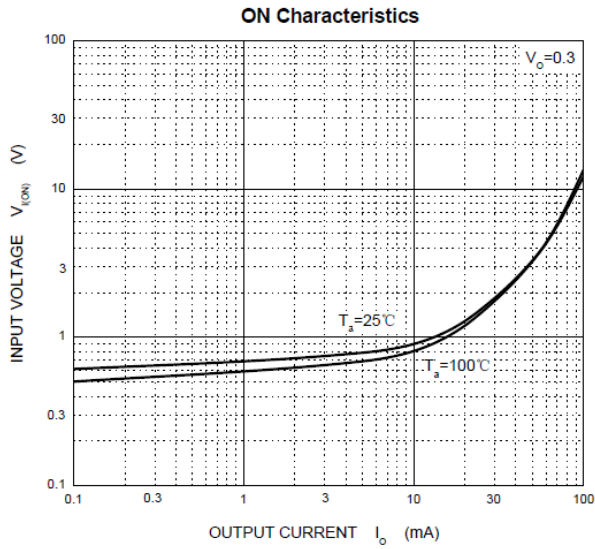
| Parameter | Symbol | Value | Unit |
|----------------------|-----------|------------|--------------------|
| Supply Voltage | V_{CC} | 50 | V |
| Input Voltage | V_{CN} | -5 to +50 | V |
| Output current | I_o | 100 | mA |
| Power Dissipation | P_D | 200 | mW |
| Junction Temperature | T_J | -55 to 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 | $V_{I(off)}$ | $V_{CC} = 5V, I_o = 0.1mA$ | 0.5 | | | 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 | μA |
| DC Current Gain | G_1 | $V_o = 5V, I_o = 10mA$ | 80 | | | |
| Input Resistance | R_1 | | 3.29 | 4.7 | 6.11 | $\text{K}\Omega$ |
| Resistance Ration | R_2/R_1 | | 8 | 10 | 12 | |
| Transition Frequency | f_T | $V_o=10V, I_o=5mA, f=100\text{MHz}$ | | 250 | | MHz |



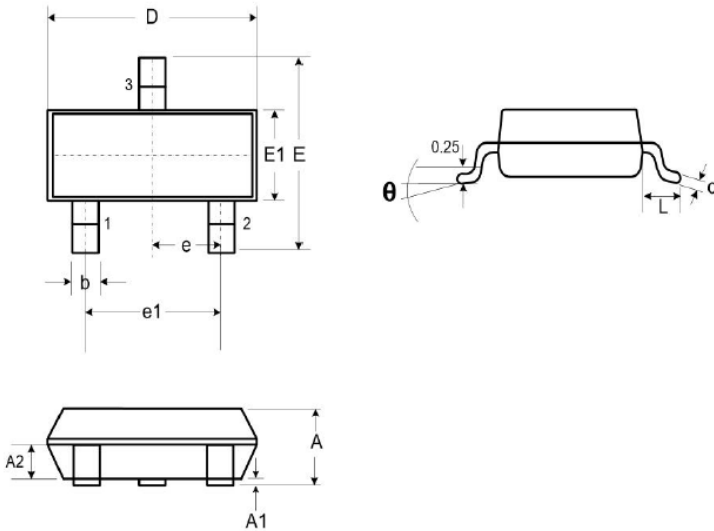
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



➤ **Package Information**

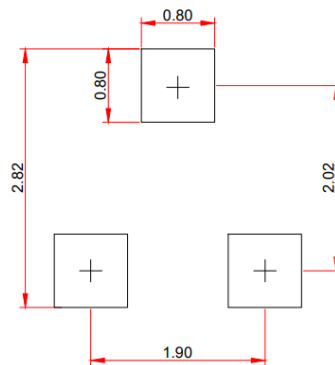
● **Mechanical Data**

SOT-23



| DIM | Millimeters | | |
|-----------|-------------|------|------|
| | Min. | Typ. | Max. |
| A | 0.89 | - | 1.12 |
| A1 | 0.01 | - | 0.10 |
| A2 | 0.88 | 0.95 | 1.02 |
| b | 0.30 | - | 0.51 |
| c | 0.08 | - | 0.18 |
| D | 2.80 | 2.90 | 3.04 |
| E | 2.10 | 2.37 | 2.64 |
| E1 | 1.20 | 1.30 | 1.40 |
| e | 0.95 | | |
| e1 | 1.90 | | |
| L | 0.40 | 0.50 | 0.60 |
| L1 | 0.55 | | |
| N | 3 | | |
| θ | 0° | - | 8° |

● **Recommended Pad outline (Unit: mm)**





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