



SSCN144EGS6

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.

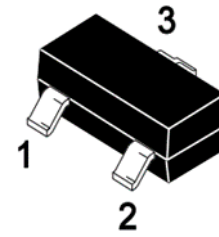
Applications

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

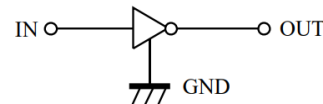
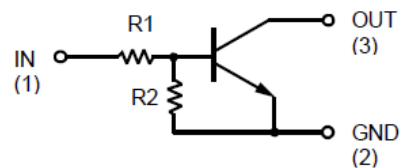
Ordering Information

| Device | Package | Shipping |
|-------------|---------|-----------|
| SSCN144EGS6 | SOT-23 | 3000/Reel |

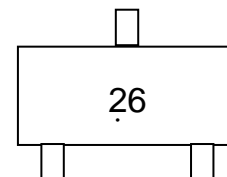
Pin configuration



SOT-23



Circuit Diagram



Marking (Top View)



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

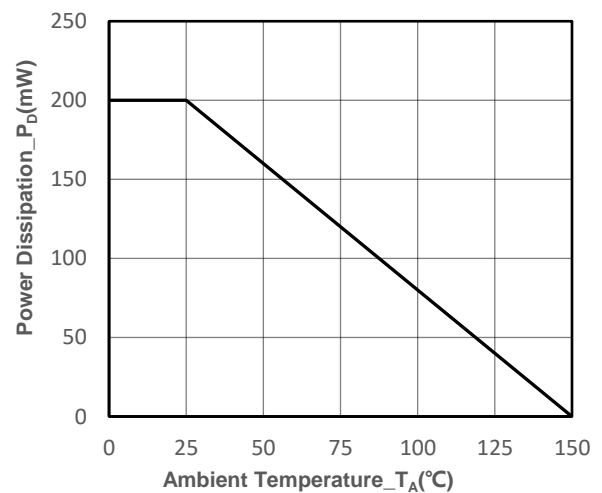
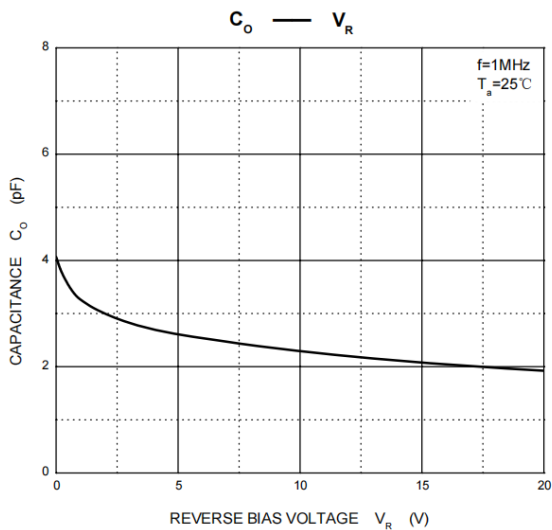
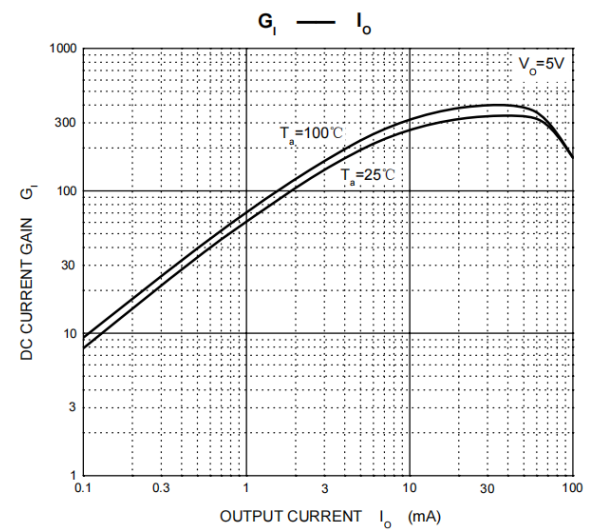
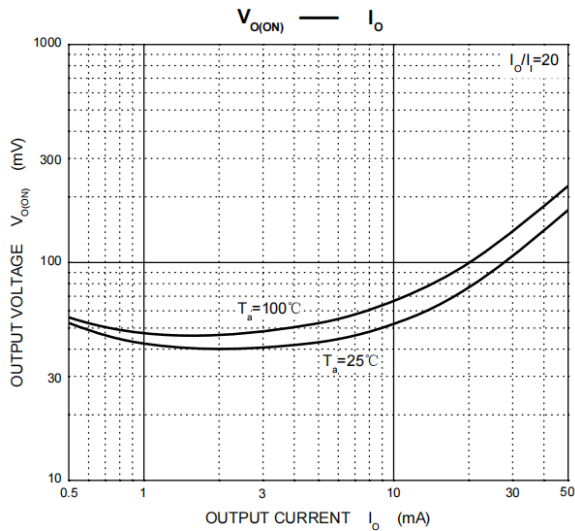
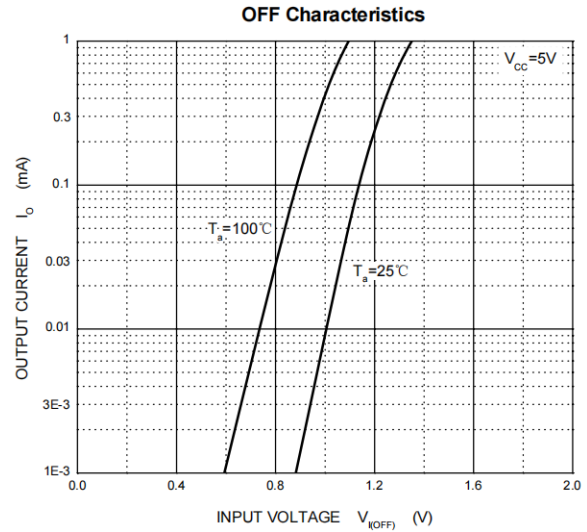
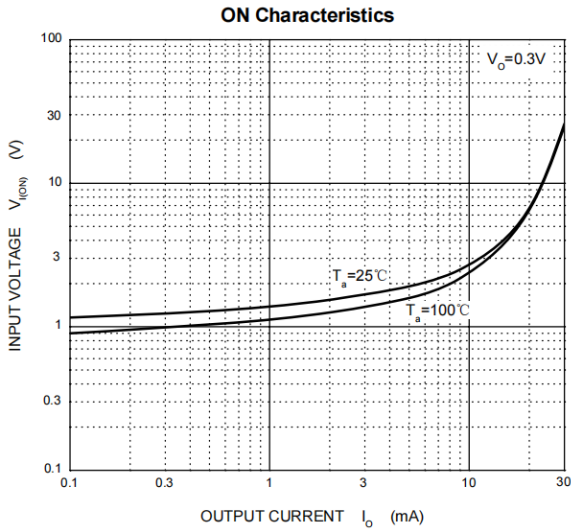
| Parameter | Symbol | Value | Unit |
|----------------------|-----------|------------|--------------------|
| Supply Voltage | V_{CC} | 50 | V |
| Input Voltage | V_{CN} | -10 to +40 | V |
| Output current | I_o | 30 | mA |
| Power Dissipation | P_D | 200 | mW |
| Junction Temperature | T_J | -55 to 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 | $V_{I(off)}$ | $V_{CC} = 5V, I_o = 100\mu A$ | 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 | μA |
| DC Current Gain | G_1 | $V_o = 5V, I_o = 5mA$ | 68 | | | |
| Input Resistance | R_1 | | 32.9 | 47 | 61.1 | K Ω |
| 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 |



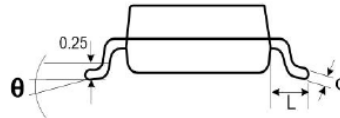
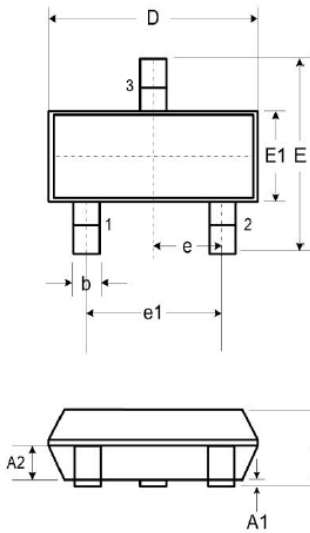
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



➤ Package Information

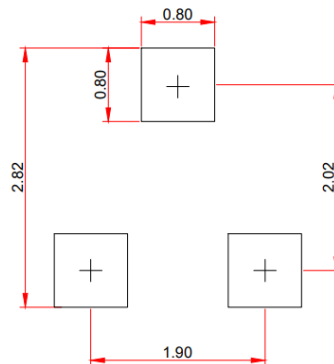
● Mechanical Data

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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