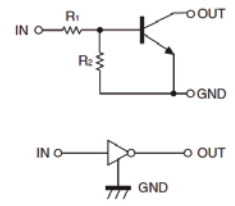


## Features

- 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 device design easy



SOT-323



Equivalent Circuit

## Absolute Maximum Ratings(TA=25℃)

| Symbol                           | Parameter                                        | Limits     | Uniat |
|----------------------------------|--------------------------------------------------|------------|-------|
| V <sub>CC</sub>                  | Supply Voltage                                   | 50         | V     |
| V <sub>IN</sub>                  | Input Voltage                                    | -10 ~ +30  | V     |
| I <sub>O</sub>                   | Output Current                                   | 100        | mA    |
| P <sub>D</sub>                   | Power Dissipation                                | 200        | mW    |
| T <sub>J</sub> ,T <sub>stg</sub> | Operation Junction and Storage Temperature Range | -55 ~ +150 | ℃     |

## Electrical Characteristics (TA=25℃ unless otherwise specified)

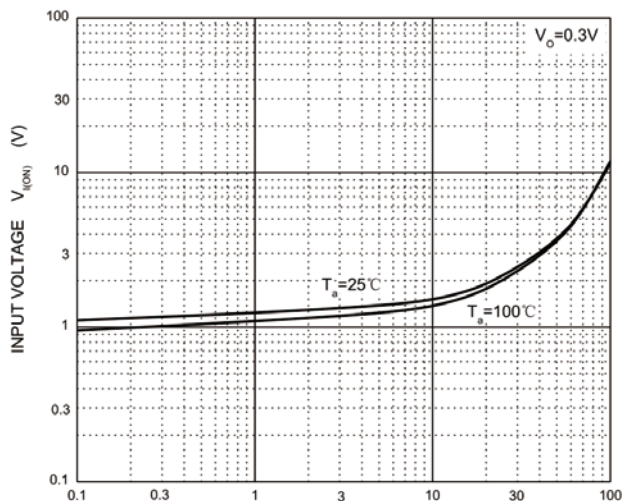
| Symbol                         | Parameter            | Test conditions                                  | Min  | Typ | Max  | Unit |
|--------------------------------|----------------------|--------------------------------------------------|------|-----|------|------|
| V <sub>I(off)</sub>            | Input voltage        | V <sub>CC</sub> =5V,I <sub>O</sub> =100μA        | 0.5  |     |      | V    |
| V <sub>I(on)</sub>             |                      | V <sub>O</sub> =0.3V,I <sub>O</sub> =20mA        |      |     | 3    | V    |
| V <sub>O(on)</sub>             | Output voltage       | I <sub>O</sub> /I <sub>I</sub> =10mA/0.5mA       |      |     | 0.3  | V    |
| I <sub>I</sub>                 | Input current        | V <sub>I</sub> =5V                               |      |     | 1.8  | mA   |
| I <sub>O(off)</sub>            | Output current       | V <sub>CC</sub> =50V,V <sub>I</sub> =0           |      |     | 0.5  | μA   |
| G <sub>I</sub>                 | DC current gain      | V <sub>O</sub> =5V,I <sub>O</sub> =10mA          | 20   |     |      |      |
| R <sub>1</sub>                 | Input resistance     |                                                  | 3.29 | 4.7 | 6.11 | kΩ   |
| R <sub>2</sub> /R <sub>1</sub> | Resistance ratio     |                                                  | 0.8  | 1   | 1.2  |      |
| f <sub>T</sub>                 | Transition frequency | V <sub>O</sub> =10V,I <sub>O</sub> =5mA,f=100MHz |      | 250 |      | MHz  |

## Ordering information

| Product ID | Marking | Naming rule                                                                                                                                                            | Pack    | Qty(PCS) |
|------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| DTC143EUA  | 23      | <div style="border: 1px solid black; padding: 5px; display: inline-block;"> DTC143EUA </div><br><div style="text-align: center;"> ↓<br/> 产品名称<br/> product name </div> | SOT-323 | 3000     |

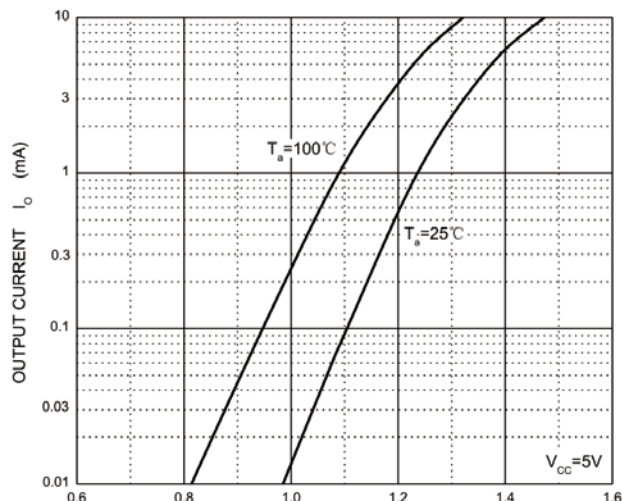
## Typical Characteristics

ON Characteristics

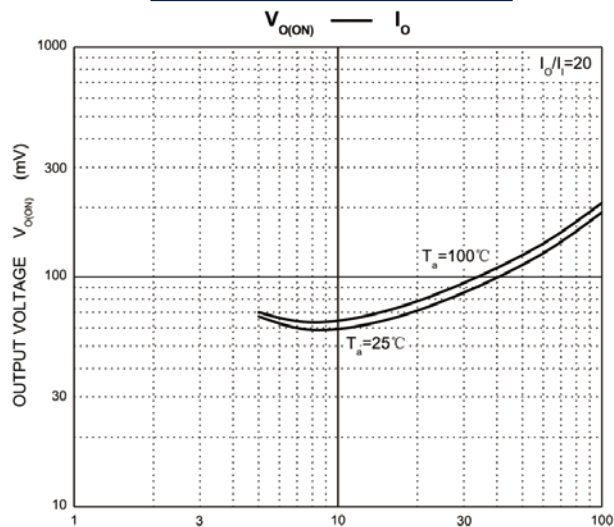


OUTPUT CURRENT  $I_O$  (mA)

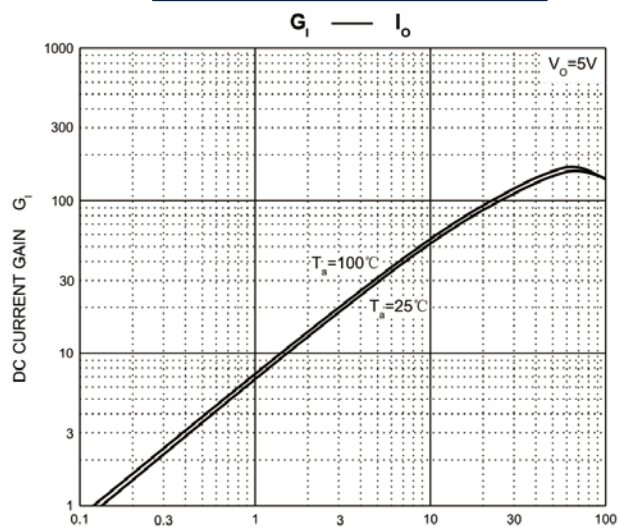
OFF Characteristics



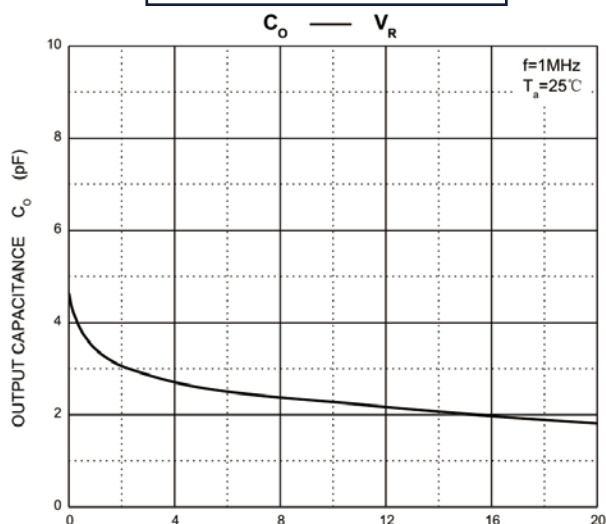
INPUT VOLTAGE  $V_{I(OFF)}$  (V)



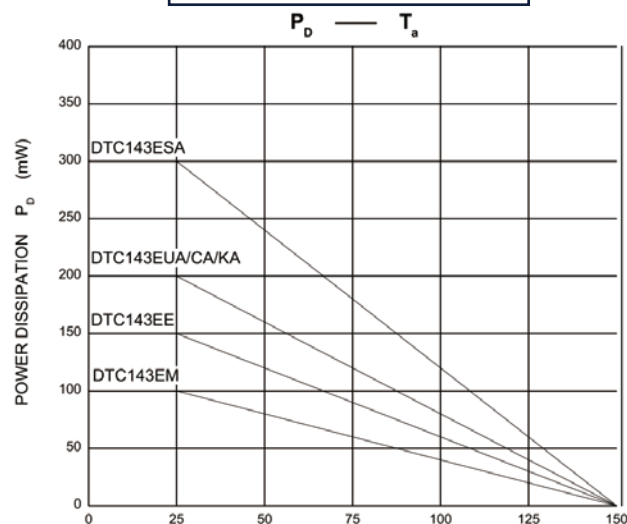
OUTPUT CURRENT  $I_O$  (mA)



OUTPUT CURRENT  $I_O$  (mA)



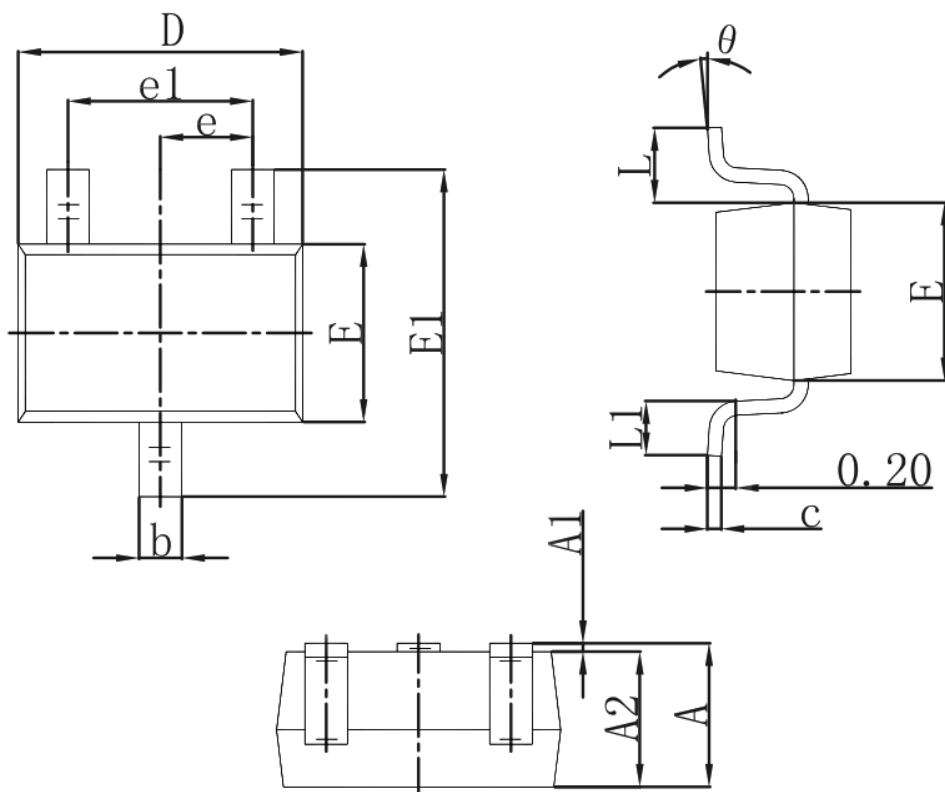
REVERSE VOLTAGE  $V_R$  (V)



AMBIENT TEMPERATURE  $T_a$  ( $^\circ\text{C}$ )



## SOT-323 Package Outline Dimensions



| Symbol   | Dimensions in Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min                       | Max   | Min                  | Max   |
| A        | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.000 | 0.035                | 0.039 |
| b        | 0.200                     | 0.400 | 0.008                | 0.016 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.000                     | 2.200 | 0.079                | 0.087 |
| E        | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1       | 1.350                     | 2.450 | 0.085                | 0.096 |
| e        | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1       | 1.200                     | 1.400 | 0.047                | 0.055 |
| L        | 0.525 REF                 |       | 0.021 REF            |       |
| L1       | 0.260                     | 0.460 | 0.010                | 0.018 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |