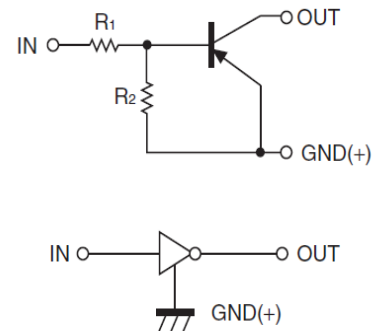


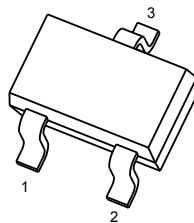
### DIGITAL TRANSISTOR (PNP)

#### 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 positive 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 de:



### PIN CONNECTIONS and MARKING



**SOT -323**

1. IN
2. GND
3. OUT

MARKING:52

### MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

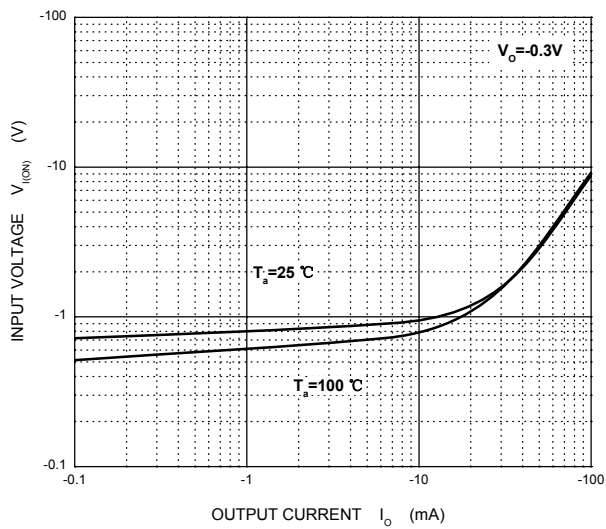
| Symbol                            | Parameter                                        | DTA123YUA |     |     |     | Unit |
|-----------------------------------|--------------------------------------------------|-----------|-----|-----|-----|------|
| V <sub>CC</sub>                   | Supply Voltage                                   | -50       |     |     |     | V    |
| V <sub>IN</sub>                   | Input Voltage                                    | -12~+5    |     |     |     | V    |
| I <sub>O</sub>                    | Output Current                                   | -100      |     |     |     | mA   |
| P <sub>D</sub>                    | Power Dissipation                                | 200       | 200 | 200 | 300 | mW   |
| T <sub>J</sub> , T <sub>stg</sub> | Operation Junction and Storage Temperature Range | -55~+150  |     |     |     | °C   |

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

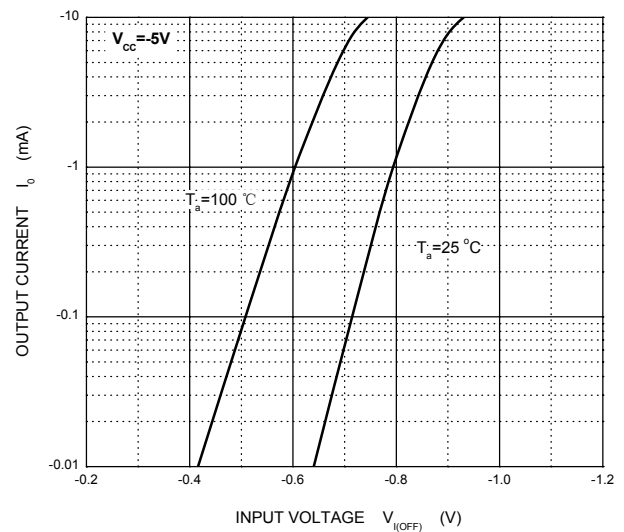
| Parameter            | Symbol                         | Conditions                                           | Min  | Typ | Max  | Unit |
|----------------------|--------------------------------|------------------------------------------------------|------|-----|------|------|
| Input voltage        | V <sub>I(off)</sub>            | V <sub>CC</sub> =-5V, I <sub>O</sub> =-100μA         | -0.3 |     |      | V    |
|                      | V <sub>I(on)</sub>             | V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA         |      |     | -3   | V    |
| Output voltage       | V <sub>O(on)</sub>             | I <sub>O</sub> /I <sub>I</sub> =-10mA/-0.5mA         |      |     | -0.3 | V    |
| Input current        | I <sub>I</sub>                 | V <sub>I</sub> =-5V                                  |      |     | -3.8 | mA   |
| Output current       | I <sub>O(off)</sub>            | V <sub>CC</sub> =-50V, V <sub>I</sub> =0             |      |     | -0.5 | μA   |
| DC current gain      | G <sub>I</sub>                 | V <sub>O</sub> =-5V, I <sub>O</sub> =-10mA           | 33   |     |      |      |
| Input resistance     | R <sub>1</sub>                 |                                                      | 1.54 | 2.2 | 2.86 | kΩ   |
| Resistance ratio     | R <sub>2</sub> /R <sub>1</sub> |                                                      | 3.6  | 4.5 | 5.5  |      |
| Transition frequency | f <sub>T</sub>                 | V <sub>O</sub> =-10V, I <sub>O</sub> =-5mA, f=100MHz |      | 250 |      | MHz  |

### Typical Characteristics

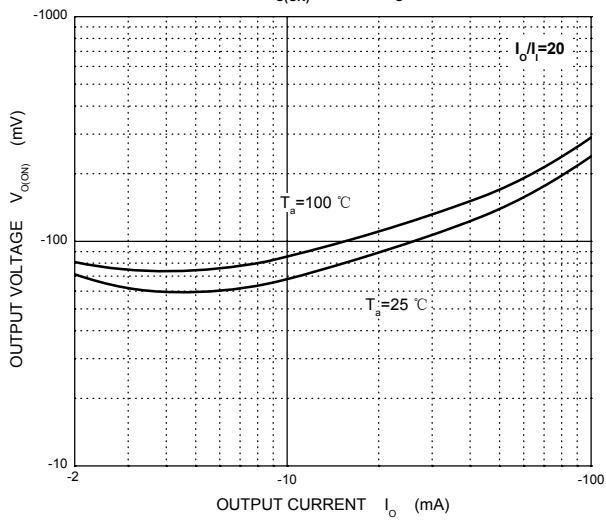
ON Characteristics



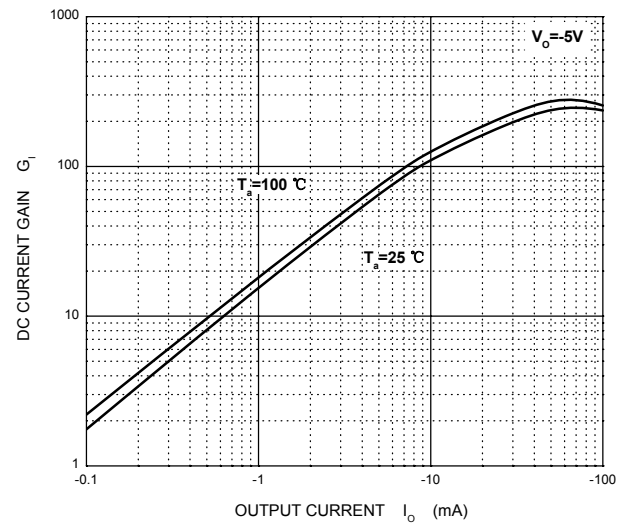
OFF Characteristics



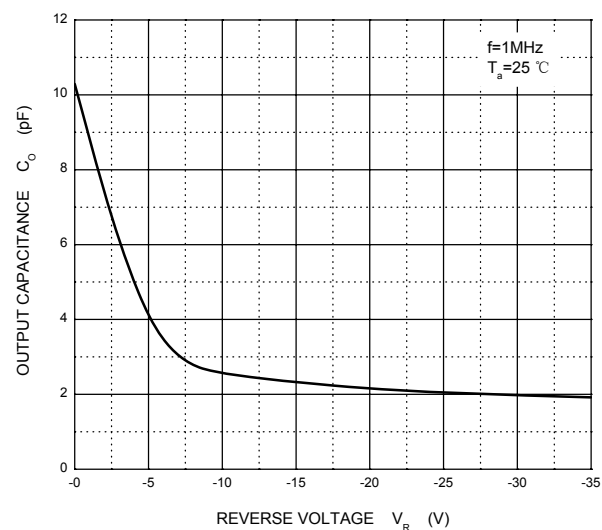
$V_{O(ON)}$  —  $I_O$



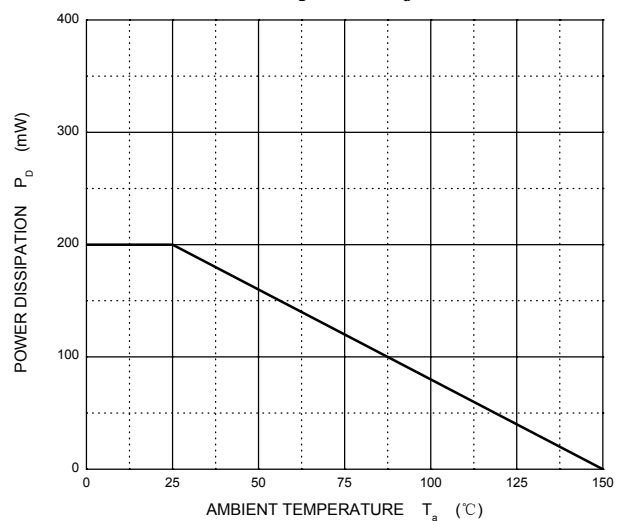
$G_I$  —  $I_O$



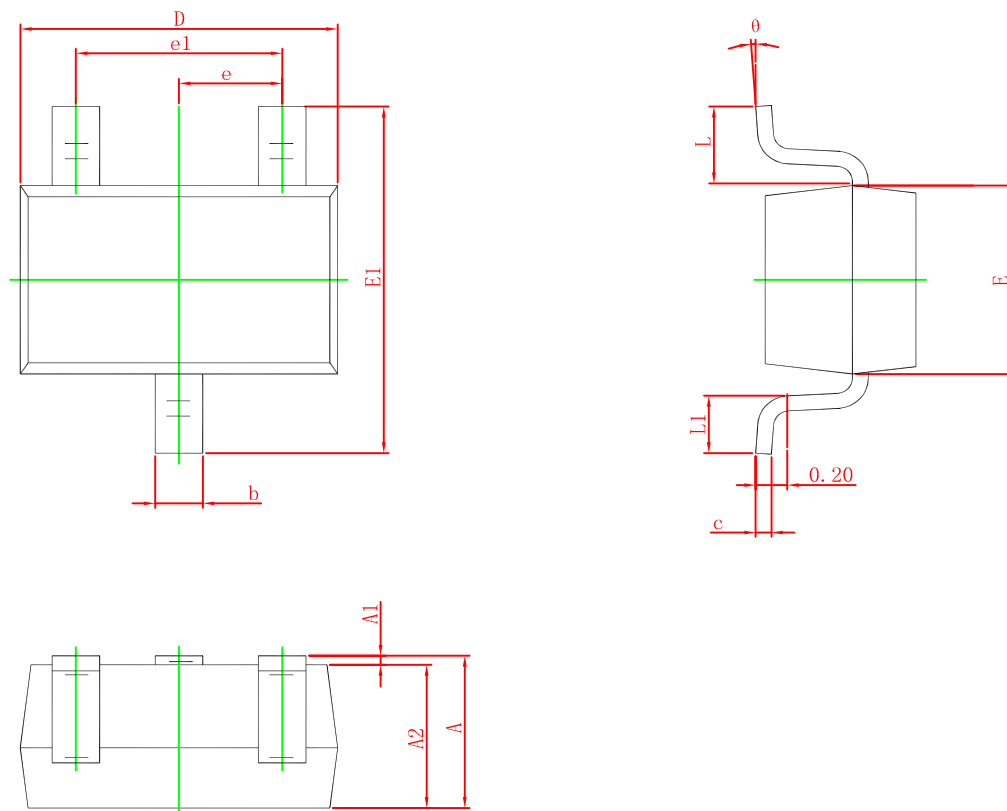
$C_O$  —  $V_R$



$P_D$  —  $T_a$



### 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       | 2.150                     | 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°    |