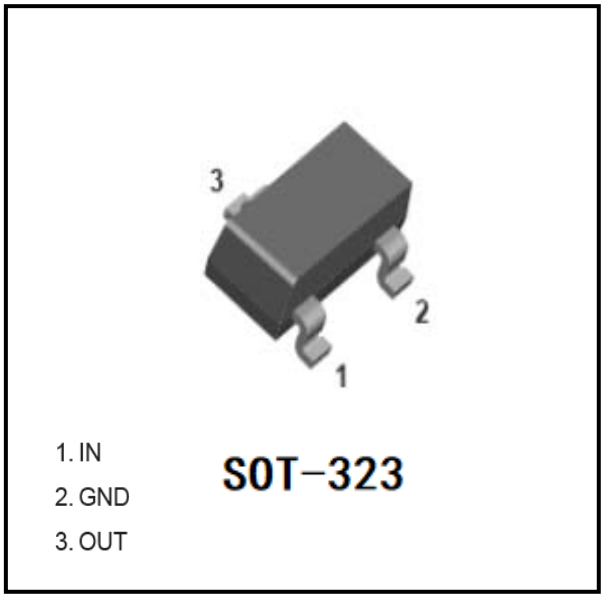
# Digital Transistors (Built-in Resistors)



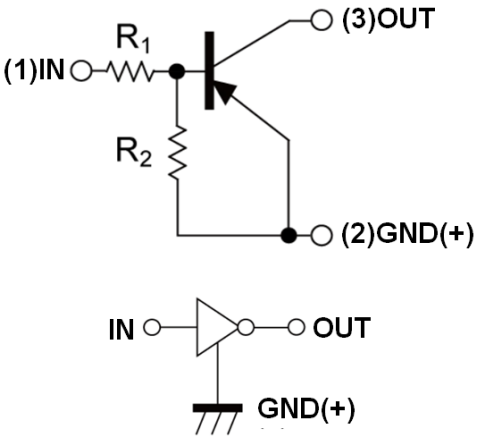

## Features

- ●Epoxy meets UL-94 V-0 flammability rating
- ●Moisure Sensitivity Level 1
- ●Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- ●Surface mount package ideally Suited for Automatic Insertion
- ●PNP

## Mechanical Data

- **Package**: SOT-323
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 132

## ■Equivalent circuit







## ■Maximum Ratings (Ta=25℃ Unless otherwise specified)

| Item | Symbol | Unit | Conditions | Value |
|---|---|---|---|---|
| Supply Voltage | $V_{CC}$ | V | | -50 |
| Input Voltage | $V_{IN}$ | V | | -12 to +5 |
| Output Current | $I_O$ | mA | | -100 |
| Power Dissipation | $P_D$ | mW | | 200 |
| Junction Temperature | $T_J$ | ℃ | | 150 |
| Storage Temperature | $T_{STG}$ | ℃ | | -55 to +150 |

## ■Electrical Characteristics (Ta=25℃ unless otherwise specified)

| Item | Symbol | Unit | Conditions | Min | Typ | Max |
|---|---|---|---|---|---|---|
| Input voltage | $VI_{(off)}$ | V | Vcc=-5V,Ic=-100uA | -0.5 | | |
| | $VI_{(on)}$ | V | Vo=-0.3V,Ic=-5mA | | | -1.1 |
| Output voltage | $Vo_{(on)}$ | V | Io /Ii =-5mA/-0.25 mA | | | -0.3 |
| Input Current | $I_I$ | mA | VI=5V | | | -3.6 |
| Output current | $I_{O(off)}$ | uA | Vcc=-50V, Vi=0 | | | -0.5 |
| DC current gain | GI | | Vo=-5V, Io =-10mA | 80 | | |
| Input resistance | $R_1$ | kΩ | | 1.54 | 2.2 | 2.86 |
| Resistance ratio | $R_2/R_1$ | | | 17 | 21 | 26 |
| Transition frequency | fT | MHz | Vo=-10V,Io=-5mA,f=100MHz | | 250 | |

## ■ Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| DTA123JUA | F2 | Approximate 0.005 | 3000 | 30000 | 120000 | 7” reel |

## ■ **Characteristics** (Typical)

Fig. 1 - DC Current Gain Characteristics

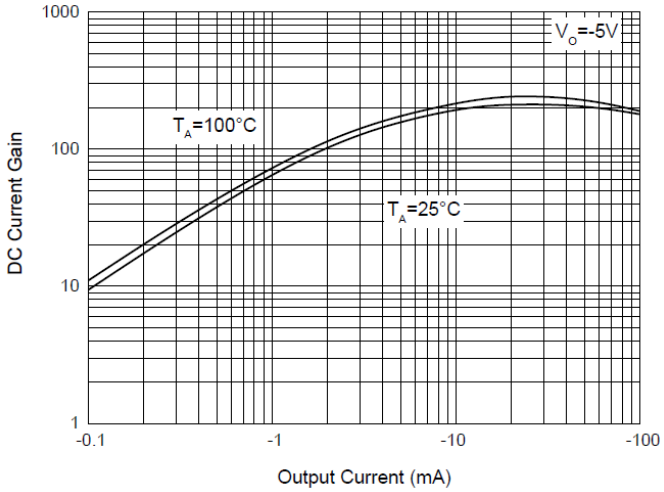



Fig. 2 - Input Voltage (on) Characteristics

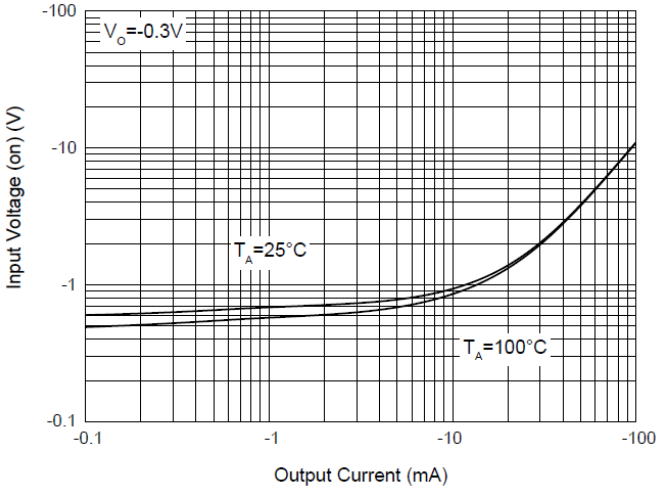



Fig. 3 - Input Voltage (off) Characteristics

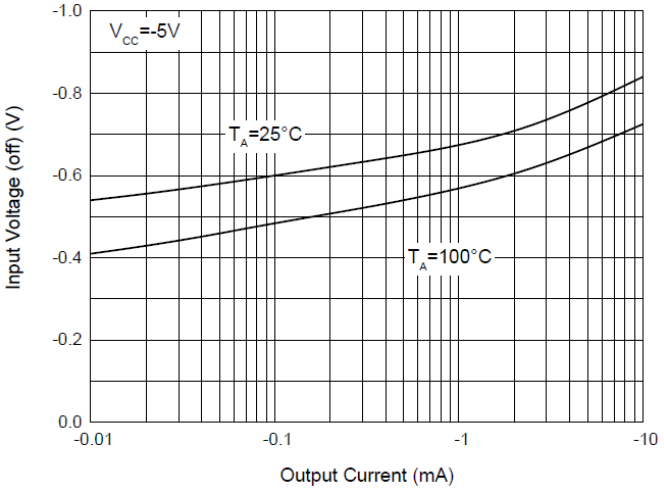



Fig. 4 - Output Voltage Characteristics

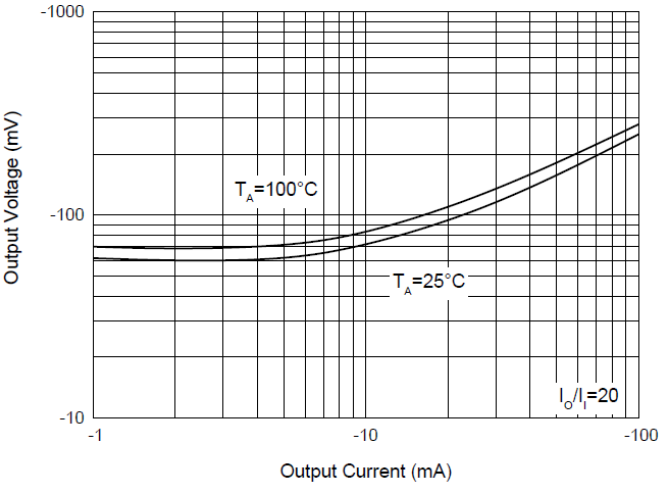
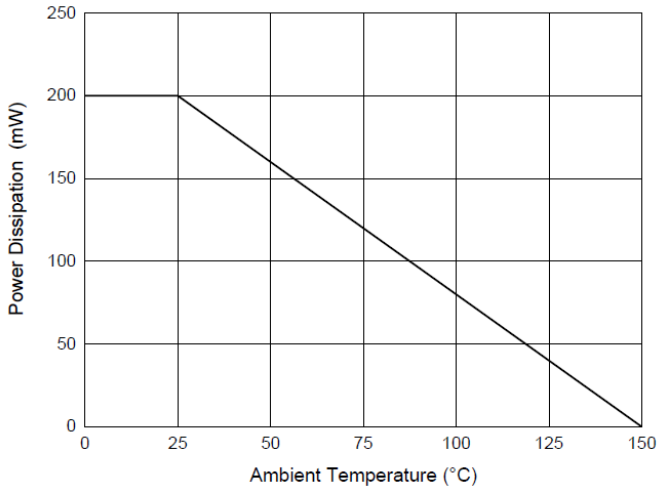
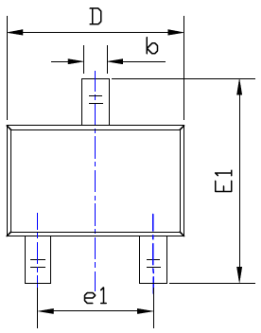


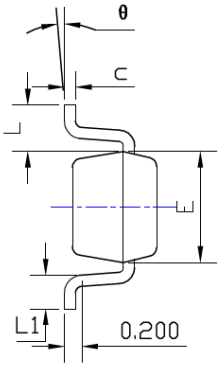

Fig. 5 - Power Derating Curve



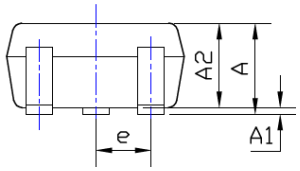
## ■ SOT-323 Package Outline Dimensions



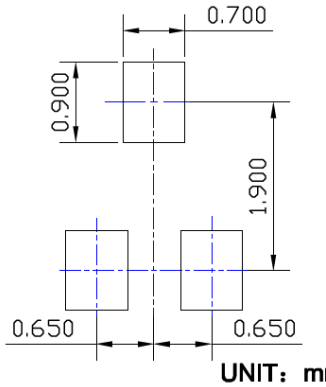

TOP VIEW




SIDE VIEW




SIDE VIEW




UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

| SYMBOL | DIMENSIONS | | | |
|---|---|---|---|---|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.035 | 0.043 | 0.900 | 1.100 |
| A1 | 0.000 | 0.004 | 0.000 | 0.100 |
| A2 | 0.035 | 0.039 | 0.900 | 1.000 |
| b | 0.006 | 0.016 | 0.150 | 0.400 |
| c | 0.004 | 0.010 | 0.100 | 0.250 |
| D | 0.071 | 0.087 | 1.800 | 2.200 |
| E | 0.045 | 0.053 | 1.150 | 1.350 |
| E1 | 0.085 | 0.096 | 2.150 | 2.450 |
| e | 0.026TYP | | 0.650TYP | |
| e1 | 0.047 | 0.055 | 1.200 | 1.400 |
| L | 0.021REF | | 0.525REF | |
| L1 | 0.010 | 0.018 | 0.260 | 0.460 |
| θ | 0° | 8° | 0° | 8° |

**NOTE:**
**1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.**
**2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.**
**3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.**

Note:
1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.All dimensions shown are exclusive of burrs and gate residues.
Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5.Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6.Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7.Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]
8. ★It is the key size.
[★ 标记为关键尺寸]

## Notice

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