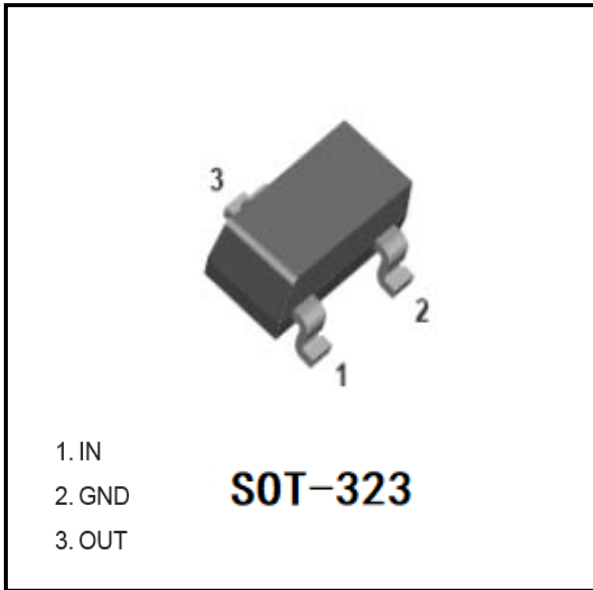


## Digital Transistors (Built-in Resistors)



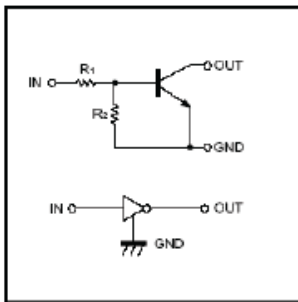
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture 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
- NPN

### Mechanical Data

- **Package:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** 62

### ■Equivalent circuit



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

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



# DTC123YUA

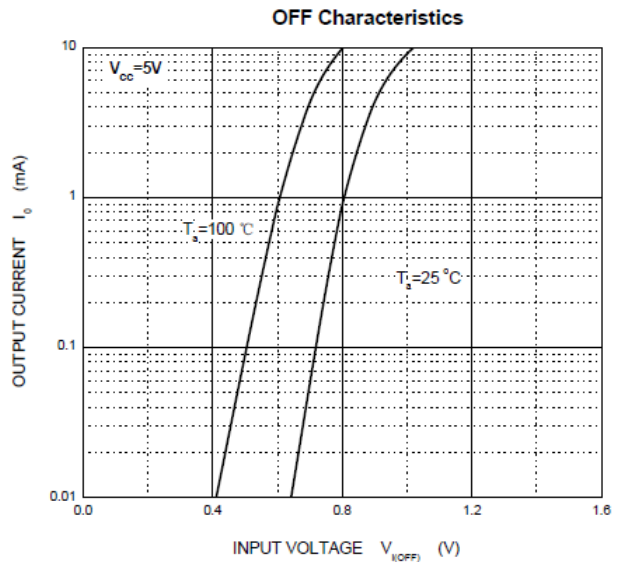
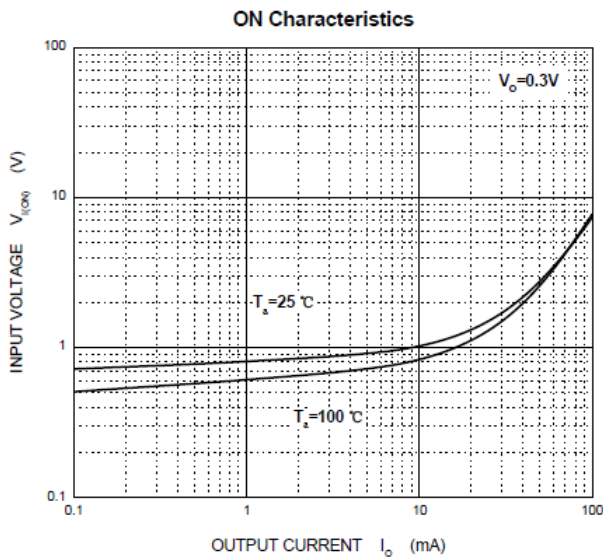
## ■ Electrical Characteristics (Ta=25°C unless otherwise specified)

| Item                 | Symbol       | Unit      | Conditions                   | Min  | Typ | Max  |
|----------------------|--------------|-----------|------------------------------|------|-----|------|
| Input voltage        | $V_{I(off)}$ | V         | $V_{CC}=5V, I_c=100\mu A$    | 0.3  |     |      |
|                      | $V_{I(on)}$  | V         | $V_o=0.3V, I_c=20mA$         |      |     | 3    |
| Output voltage       | $V_{O(on)}$  | V         | $I_o / I_i = 10mA/0.5 mA$    |      |     | 0.3  |
| Output current       | $I_{O(off)}$ | $\mu A$   | $V_{CC}=50V, V_i=0$          |      |     | 0.5  |
| DC current gain      | GI           |           | $V_o=5V, I_o=10mA$           | 33   |     |      |
| Input resistance     | $R_1$        | $k\Omega$ |                              | 1.54 | 2.2 | 2.86 |
| Resistance ratio     | $R_2/R_1$    |           |                              | 3.7  | 4.7 | 5.7  |
| Transition frequency | fT           | MHz       | $V_o=10V, I_o=5mA, f=100MHz$ |      | 250 |      |

## ■ Ordering Information (Example)

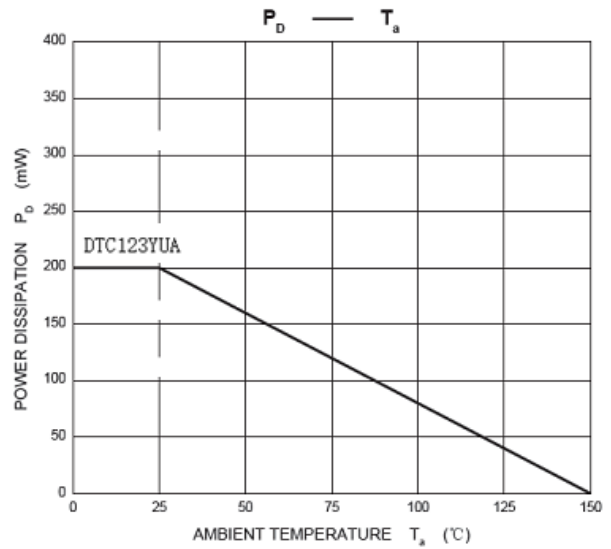
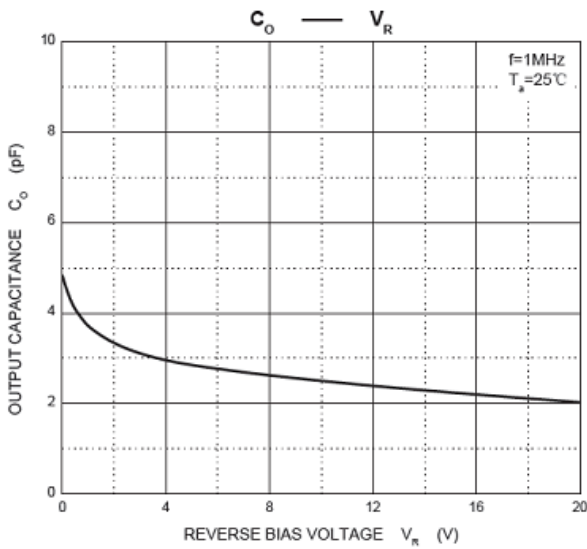
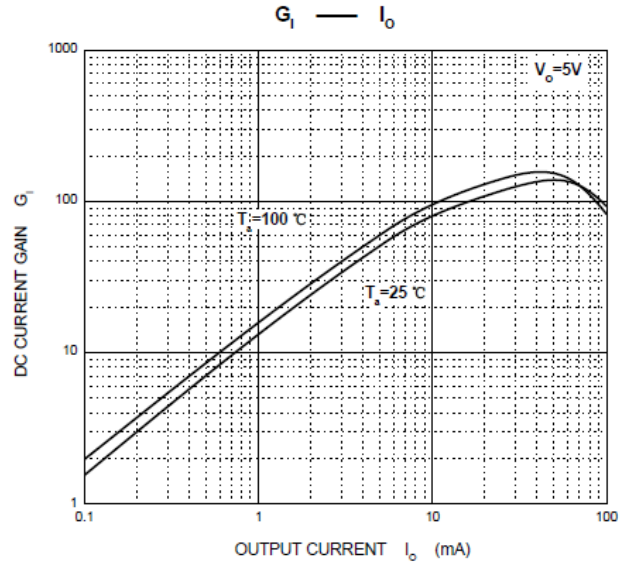
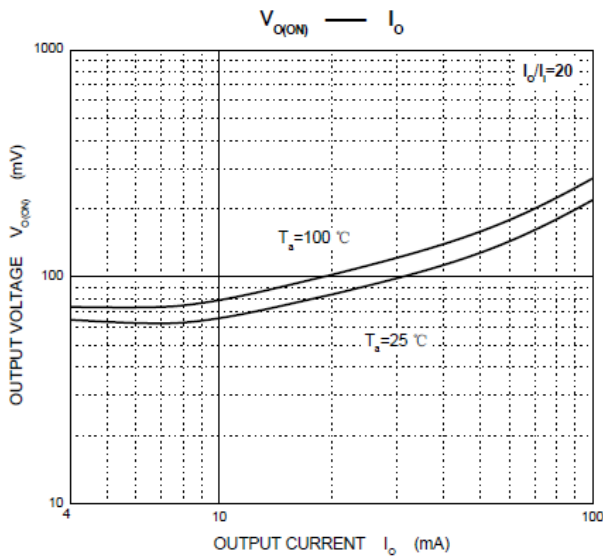
| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| DTC123YUA    | F2           | Approximate 0.008 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics (Typical)





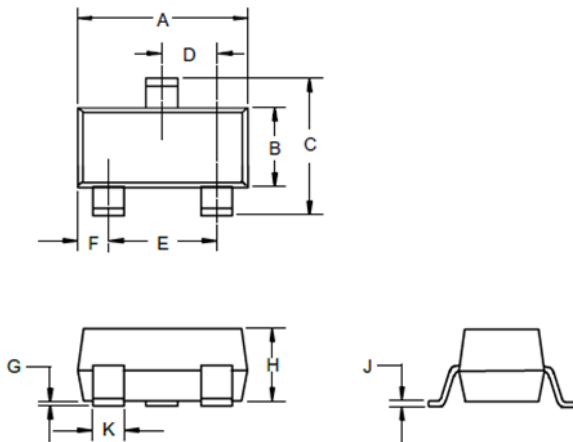
# DTC123YUA





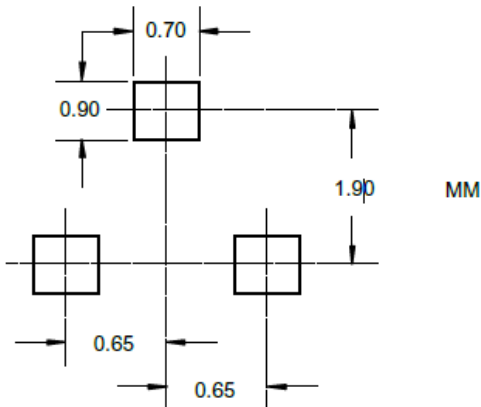
# DTC123YUA

## ■ SOT-323 Package Outline Dimensions



| DIMENSIONS |              |      |             |      |      |
|------------|--------------|------|-------------|------|------|
| DIM        | INCHES       |      | MM          |      | NOTE |
|            | MIN          | MAX  | MIN         | MAX  |      |
| A          | .071         | .087 | 1.80        | 2.20 |      |
| B          | .045         | .053 | 1.15        | 1.35 |      |
| C          | .083         | .096 | 2.10        | 2.45 |      |
| D          | .026 Nominal |      | 0.65Nominal |      |      |
| E          | .047         | .055 | 1.20        | 1.40 |      |
| F          | .012         | .016 | .30         | .40  |      |
| G          | .000         | .004 | .000        | .100 |      |
| H          | .035         | .039 | .90         | 1.00 |      |
| J          | .004         | .010 | .100        | .250 |      |
| K          | .006         | .016 | .15         | .40  |      |

## ■ SOT-323 Suggested Pad Layout



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