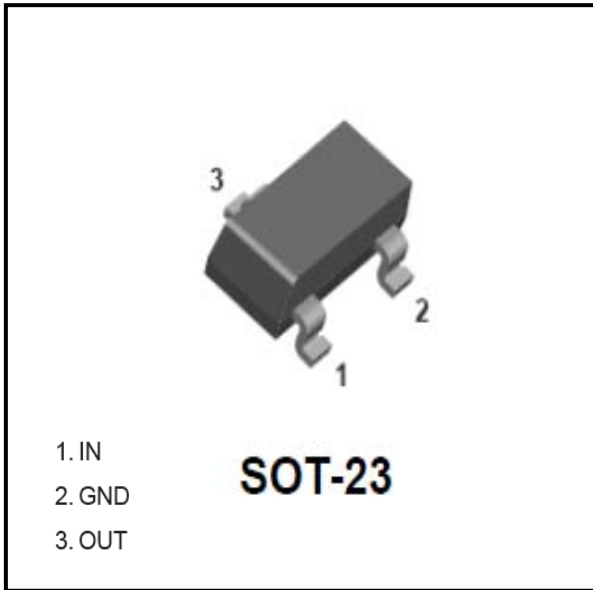


## Digital Transistors (Built-in Resistors)



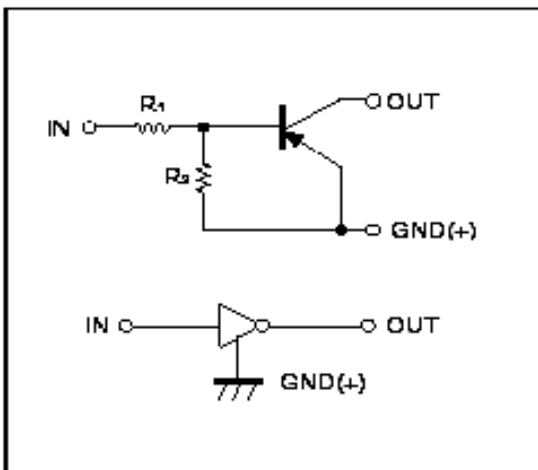
### Features

- 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
- PNP

### Mechanical Data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** E11

### Equivalent circuit



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

| ITEM                 | SYMBOL | UNIT | CONDITIONS | VALUE       |
|----------------------|--------|------|------------|-------------|
| Supply Voltage       | VCC    | V    |            | -50         |
| Input Voltage        | VIN    | V    |            | -10 to +5   |
| Output Current       | IO     | mA   |            | -100        |
| Power Dissipation    | PD     | mW   |            | 200         |
| Junction Temperature | Tj     | °C   |            | 150         |
| Storage Temperature  | TSTG   | °C   |            | -55 to +150 |



# DTA113ZCA

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

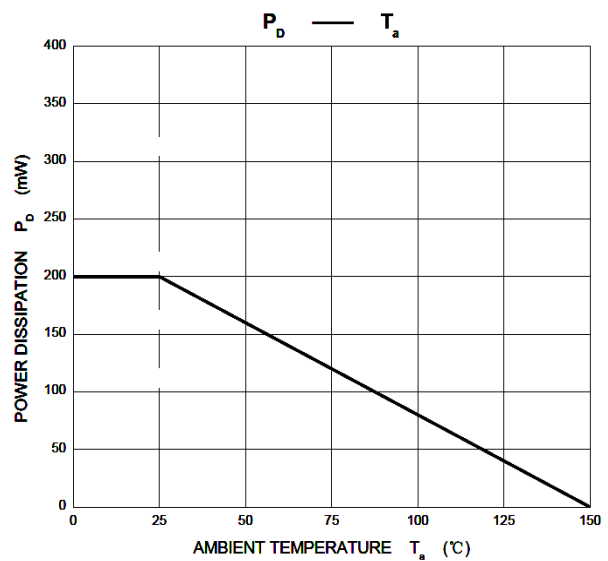
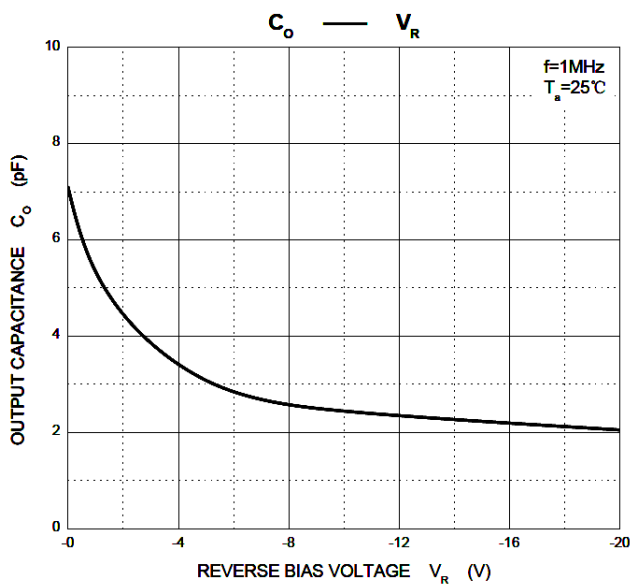
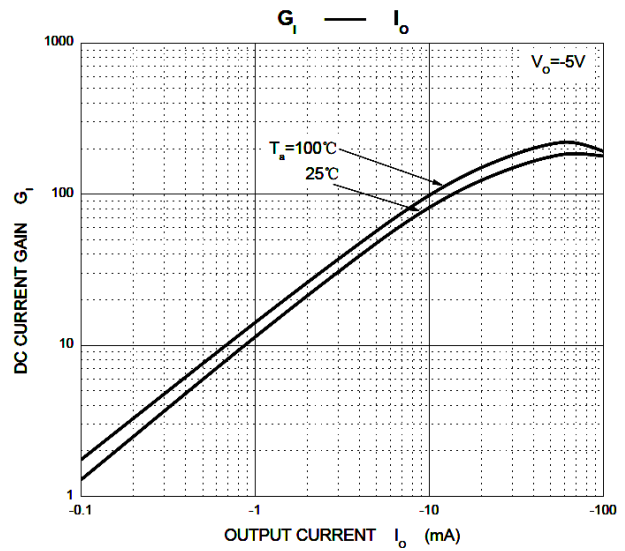
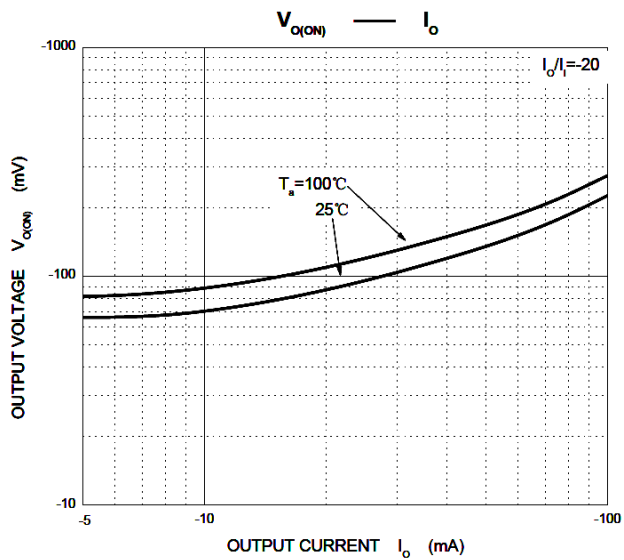
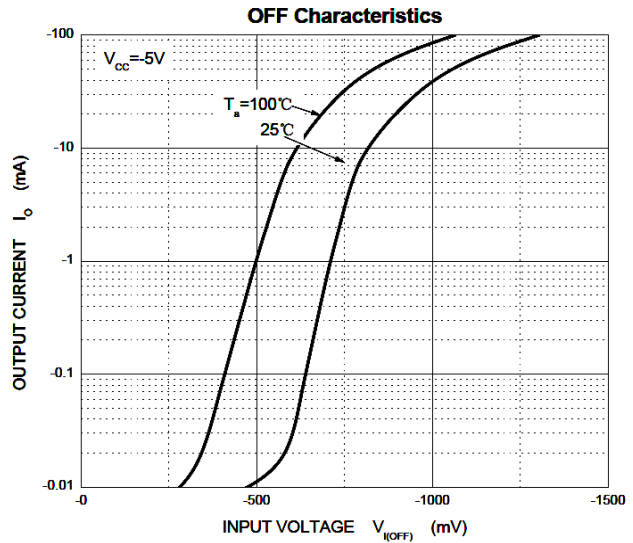
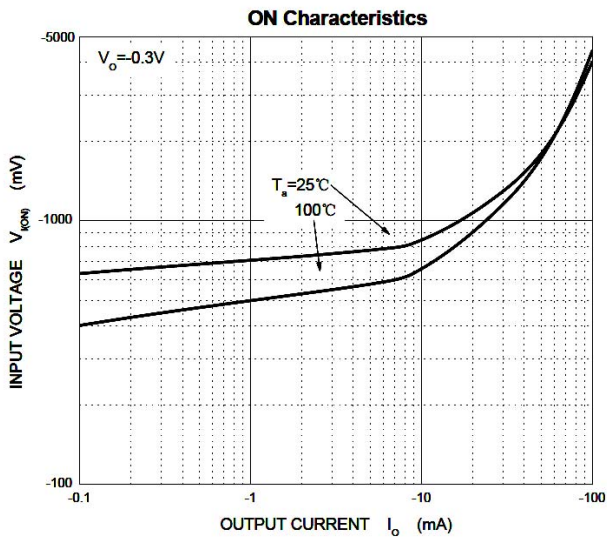
| ITEM                 | SYMBOL                         | UNIT | CONDITIONS                                                                    | MIN  | TYP | MAX  |
|----------------------|--------------------------------|------|-------------------------------------------------------------------------------|------|-----|------|
| Input voltage        | $V_{I(off)}$                   | V    | VCC=-5V, I <sub>c</sub> =100uA<br>V <sub>O</sub> =-0.3V, I <sub>c</sub> =20mA | -0.3 |     |      |
|                      | $V_{I(on)}$                    | V    |                                                                               |      |     | -3   |
| Output voltage       | $V_{O(on)}$                    | V    | I <sub>o</sub> / I <sub>i</sub> = -10mA / -0.5 mA                             |      |     | -0.3 |
| Output current       | I <sub>O(off)</sub>            | uA   | VCC=-50V, V <sub>i</sub> =0                                                   |      |     | -0.5 |
| DC current gain      | GI                             |      | V <sub>o</sub> =-5V, I <sub>o</sub> = -5mA                                    | 33   |     |      |
| Input resistance     | R <sub>1</sub>                 | kΩ   |                                                                               | 0.7  | 1.0 | 1.3  |
| Resistance ratio     | R <sub>2</sub> /R <sub>1</sub> |      |                                                                               | 8    | 10  | 12   |
| Transition frequency | f <sub>T</sub>                 | MHz  | V <sub>o</sub> =10V, I <sub>O</sub> =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 |
|--------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| DTA113ZCA    | F2           | Approximate 0.009 | 3000                 | 30000                   | 120000                     | 7" reel       |



■ Characteristics (Typical)





# DTA113ZCA

## ■SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950TYP                  |       | 0.037TYP             |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550REF                  |       | 0.022REF             |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## ■SOT-23Suggested Pad Layout





## DTA113ZCA

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