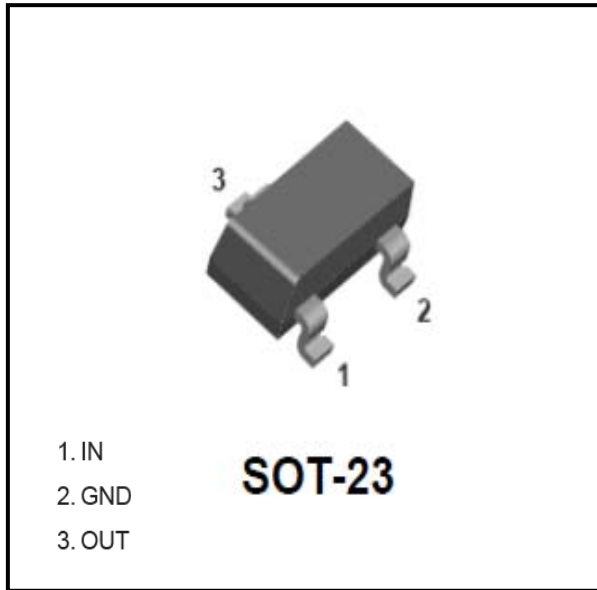


## Digital Transistors (Built-in Resistors)



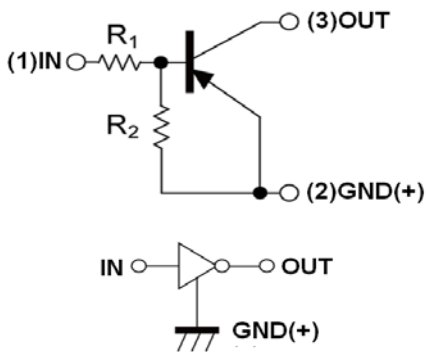
### Features

- 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

### ■Equivalent circuit



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

| ITEM                 | SYMBOL    | UNIT | CONDITIONS | VALUE       |
|----------------------|-----------|------|------------|-------------|
| Device marking code  |           |      |            | 16          |
| Supply Voltage       | $V_{CC}$  | V    |            | -50         |
| Input Voltage        | $V_{IN}$  | V    |            | -40 to +10  |
| 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 |



## DTA144ECA

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

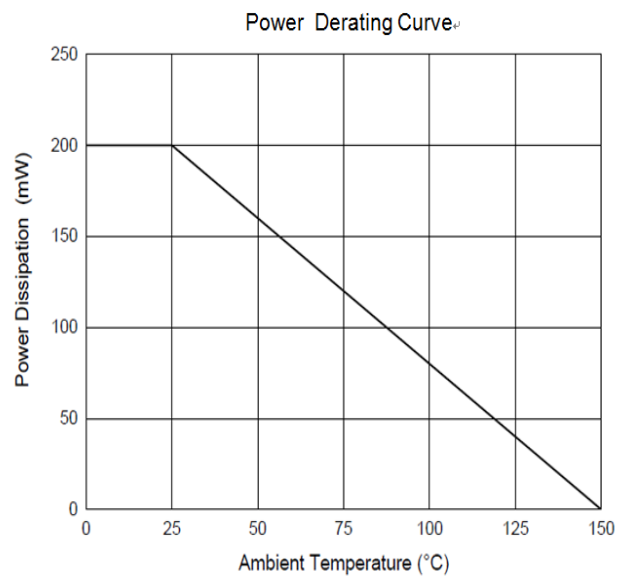
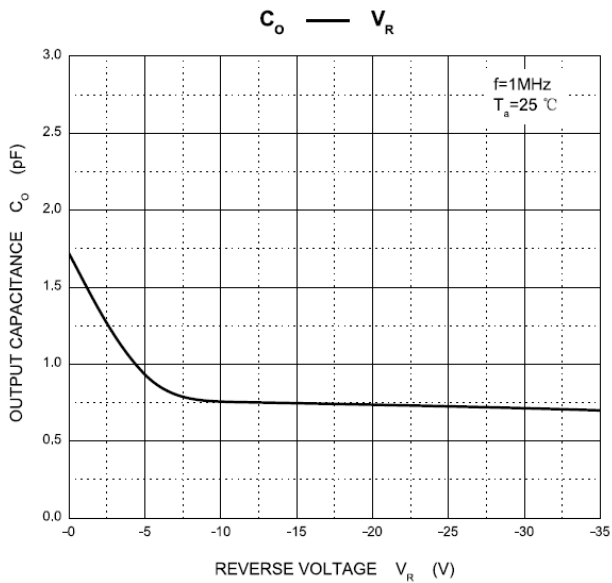
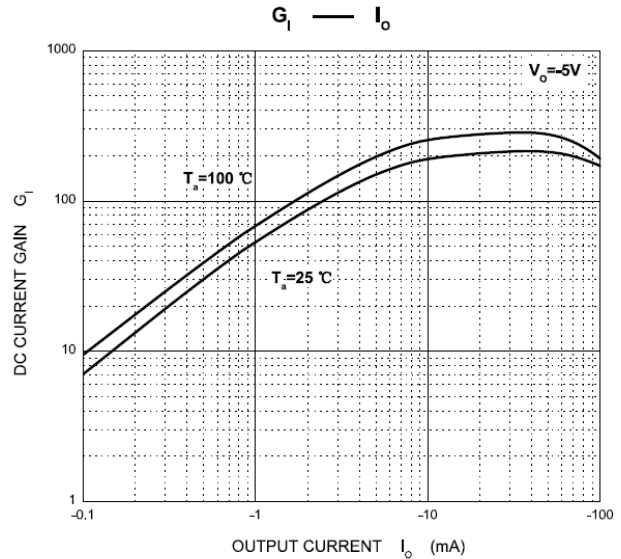
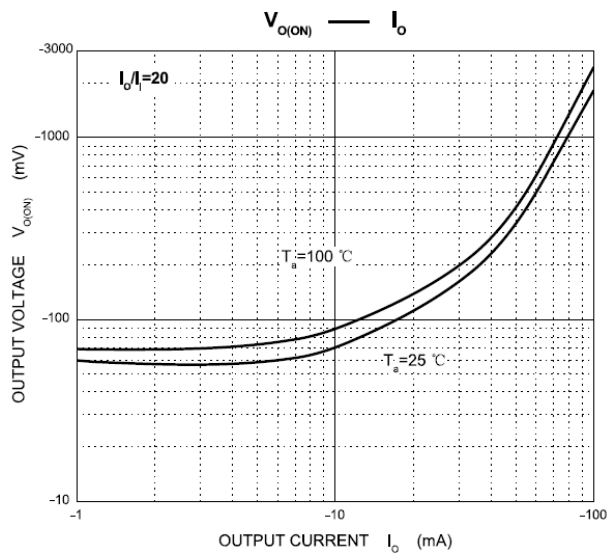
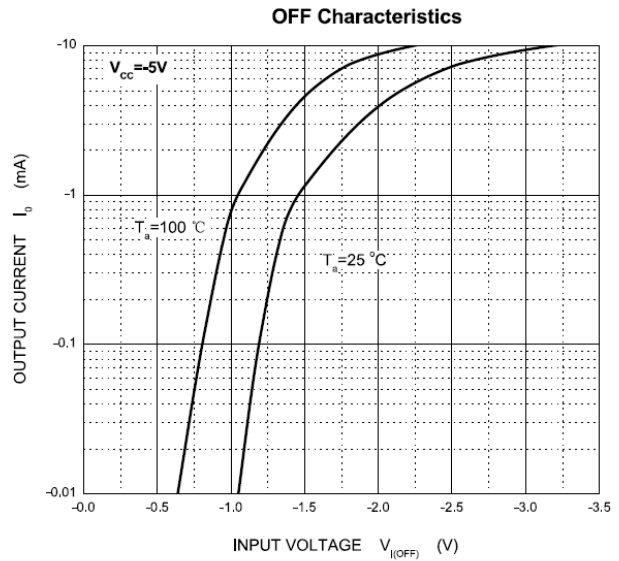
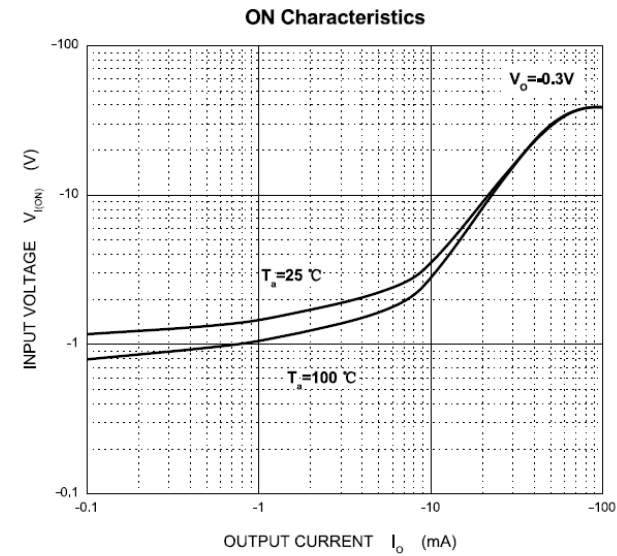
| ITEM                 | SYMBOL       | UNIT       | CONDITIONS                    | MIN  | TYP | MAX   |
|----------------------|--------------|------------|-------------------------------|------|-----|-------|
| Input voltage        | $V_{I(off)}$ | V          | $V_{CC}=-5V, I_c=-100\mu A$   | -0.5 |     |       |
|                      | $V_{I(on)}$  | V          | $V_o=-0.3V, I_c=-2mA$         |      |     | -3    |
| Output voltage       | $V_{O(on)}$  | V          | $I_o / I_i = -10mA / -0.5 mA$ |      |     | -0.3  |
| Input current        | $I_I$        | mA         | $V_i=-5V$                     |      |     | -0.18 |
| Output current       | $I_{O(off)}$ | $\mu A$    | $V_{CC}=-50V, V_i=0$          |      |     | -0.5  |
| DC current gain      | $G_I$        |            | $V_o=-5V, I_o=-5mA$           | 68   |     |       |
| Input resistance     | $R_1$        | k $\Omega$ |                               | 32.9 | 47  | 61.1  |
| Resistance ratio     | $R_2/R_1$    |            |                               | 0.8  | 1   | 1.2   |
| Transition frequency | fT           | MHz        | $V_{CE}=-10V, I_E=-5mA$       |      | 250 |       |

### ■ Ordering Information (Example)

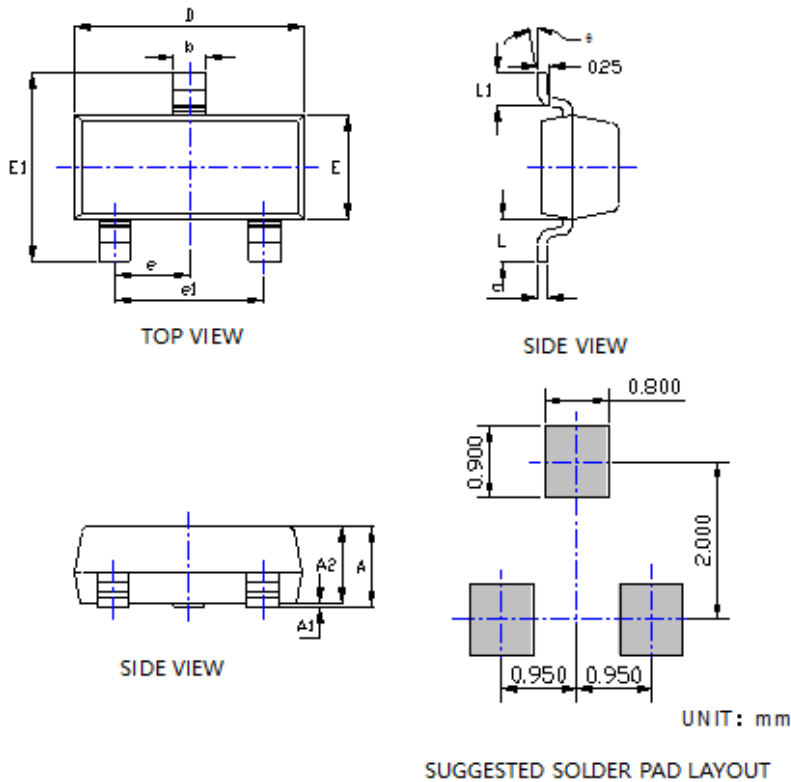
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| DTA144ECA     | F2           | Approximate 0.009 | 3000                 | 30000                   | 120000                     | 7" reel       |



## ■ Characteristics (Typical)



## ■SOT-23 Package Outline Dimensions



| SYMBOL | DIMENSIONS |       |            |       |
|--------|------------|-------|------------|-------|
|        | INCHES     |       | Millimeter |       |
|        | MIN.       | MAX.  | MIN.       | MAX.  |
| A      | 0.035      | 0.045 | 0.900      | 1.150 |
| A1     | 0.000      | 0.004 | 0.000      | 0.100 |
| A2     | 0.035      | 0.041 | 0.900      | 1.050 |
| b      | 0.012      | 0.020 | 0.300      | 0.500 |
| c      | 0.004      | 0.008 | 0.100      | 0.200 |
| D      | 0.110      | 0.118 | 2.800      | 3.000 |
| E      | 0.047      | 0.055 | 1.200      | 1.400 |
| E1     | 0.089      | 0.100 | 2.250      | 2.550 |
| e      | 0.037TYP   |       | 0.950TYP   |       |
| e1     | 0.071      | 0.079 | 1.800      | 2.000 |
| L      | 0.022REF   |       | 0.550REF   |       |
| L1     | 0.012      | 0.020 | 0.300      | 0.500 |
| 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]



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