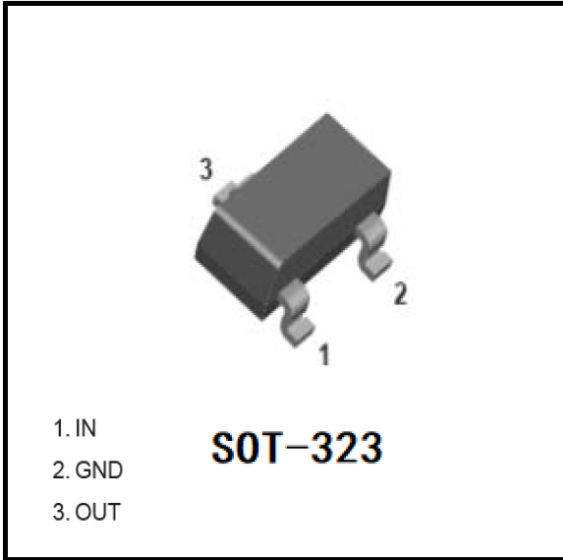


Digital Transistors (Built-in Resistors)



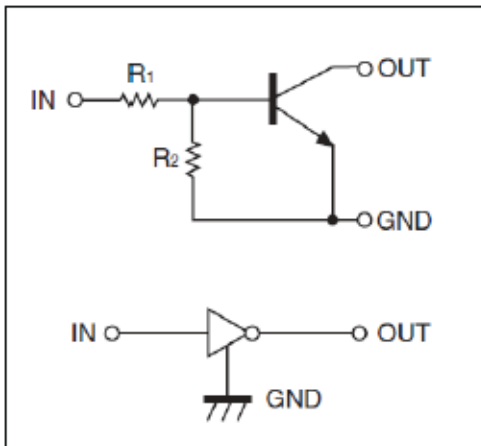
Features

- Epoxy meets UL-94 V-0 flammability rating
- 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
- **Marking:** 25

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 +40 |
| Output Current | IO | mA | | 30 |
| Peak Collector Current | ICM | mA | | 100 |
| Power Dissipation | PD | mW | | 200 |
| Junction Temperature | TJ | °C | | 150 |
| Storage Temperature | TSTG | °C | | -55 to +150 |



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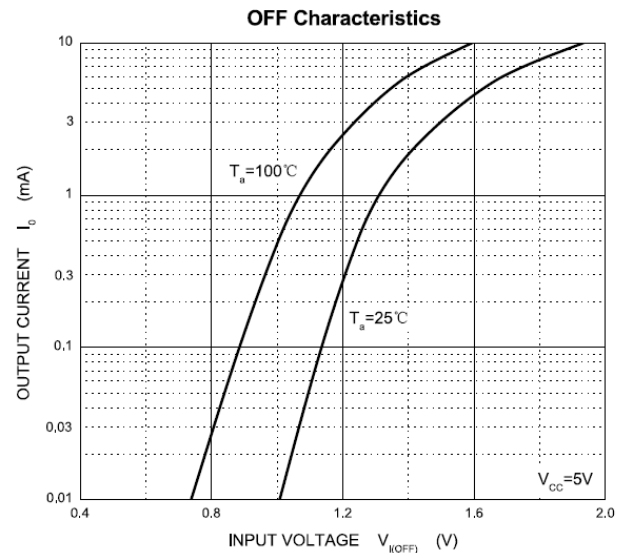
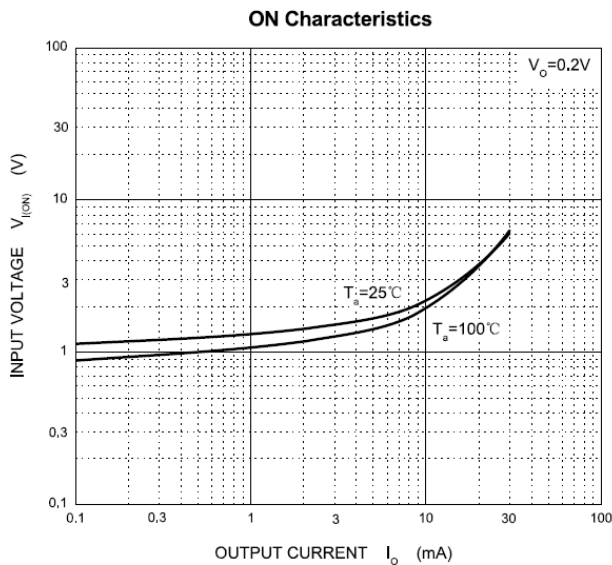
■ Electrical Characteristics (Ta=25°C unless otherwise specified)

| ITEM | SYMBOL | UNIT | CONDITIONS | MIN | TYP | MAX |
|----------------------|--------------|-----------|--|------|-----|------|
| Input voltage | $V_{I(off)}$ | V | $V_{CC}=5V, I_c=100\mu A$ $V_O=0.2V, I_c=5mA$ | 0.5 | | |
| | $V_{I(on)}$ | V | | | | 3 |
| Output voltage | $V_{O(on)}$ | V | $I_o / I_i = 10mA / 0.5 mA$ | | | 0.3 |
| Input current | I_i | mA | $V_i=5V$ | | | 0.36 |
| Output current | $I_{O(off)}$ | μA | $V_{CC}=50V, V_i=0$ | | | 0.5 |
| DC current gain | G_i | | $V_o=5V, I_o=5mA$ | 56 | | |
| Input resistance | R_1 | $k\Omega$ | | 15.4 | 22 | 28.6 |
| Resistance ratio | R_2/R_1 | | | 0.8 | 1.0 | 1.2 |
| Transition frequency | f_T | MHz | $V_{CE}=10V, I_E=-5mA, f=100MHz$ | | 250 | |

■ Ordering Information (Example)

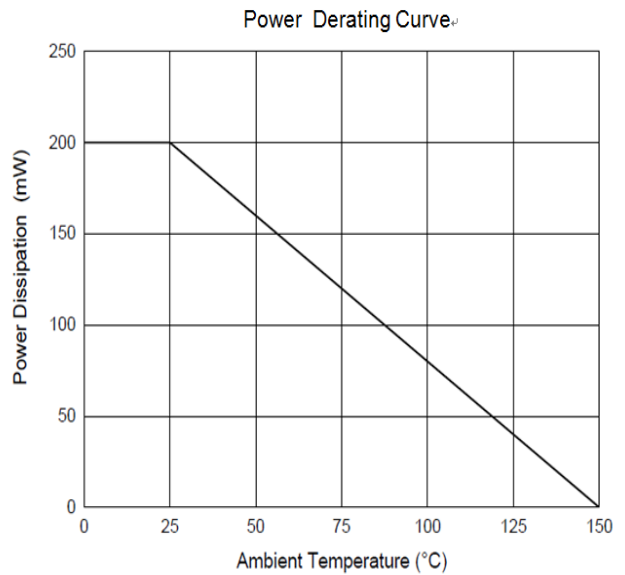
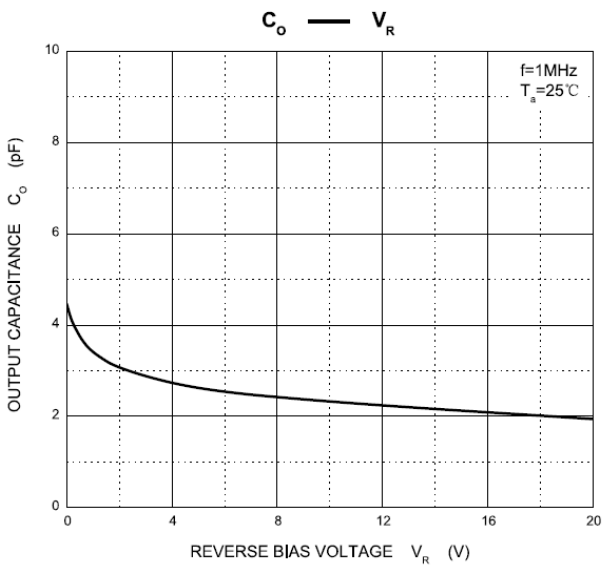
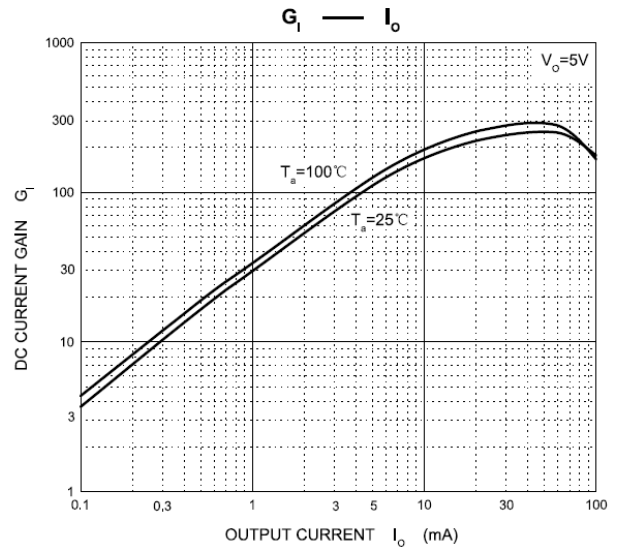
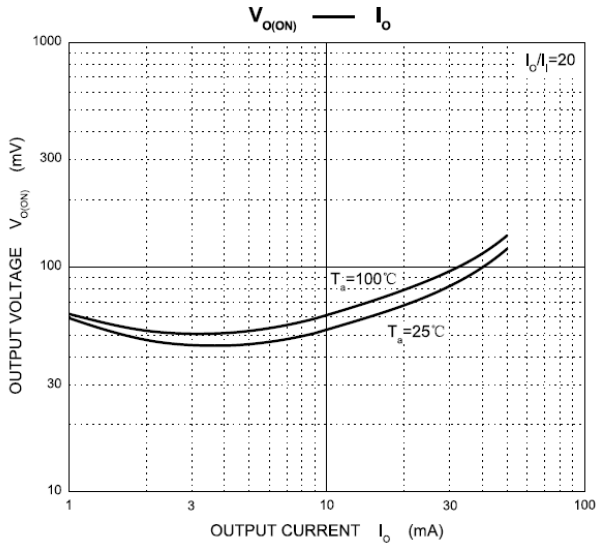
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| DTC124EUA | F2 | Approximate 0.009 | 3000 | 30000 | 120000 | 7" reel |

■ Characteristics (Typical)





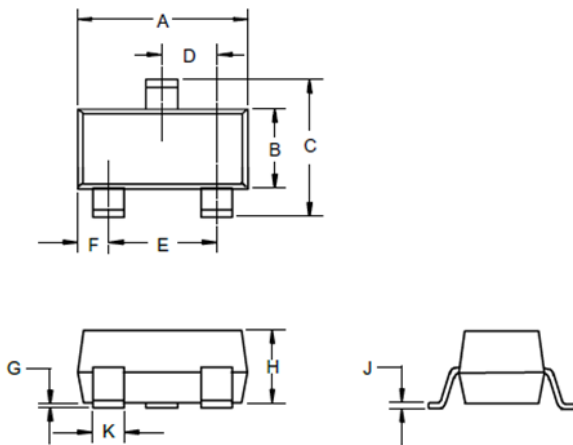
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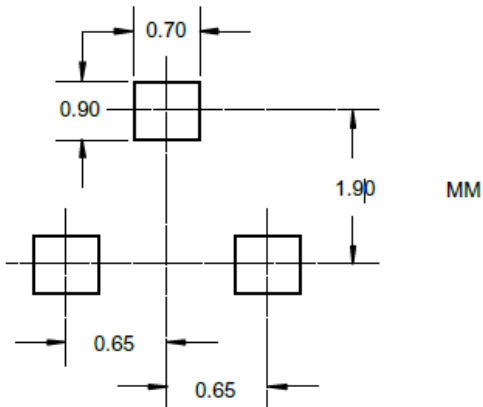
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■SOT-323 Package Outline Dimensions



| 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





DTC124EUA

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