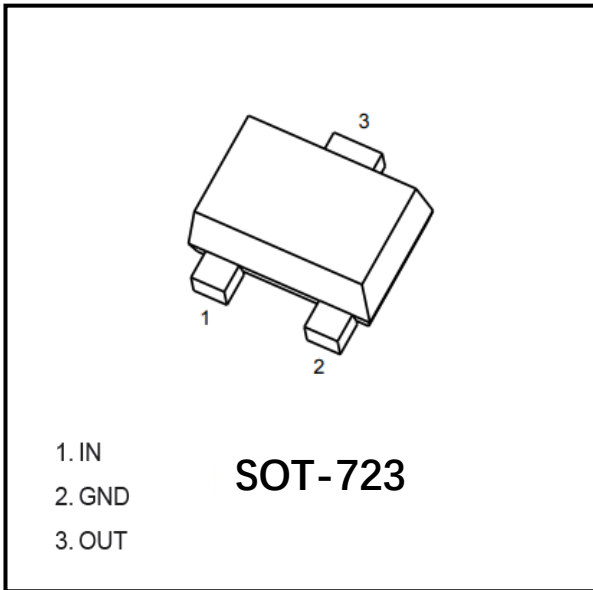


Digital Transistors (Built-in Resistors)



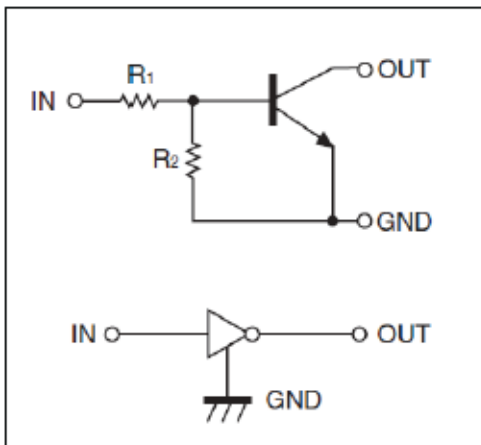
Features

- 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-723
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** E23

■Equivalent circuit



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

| ITEM | SYMBOL | UNIT | CONDITIONS | VALUE |
|----------------------|--------|------|------------|-------------|
| Supply Voltage | VCC | V | | 50 |
| Input Voltage | VIN | V | | -5 to +30 |
| Output Current | IO | mA | | 100 |
| Power Dissipation | PD | mW | | 100 |
| Junction Temperature | Tj | °C | | 150 |
| Storage Temperature | TSTG | °C | | -55 to +150 |



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

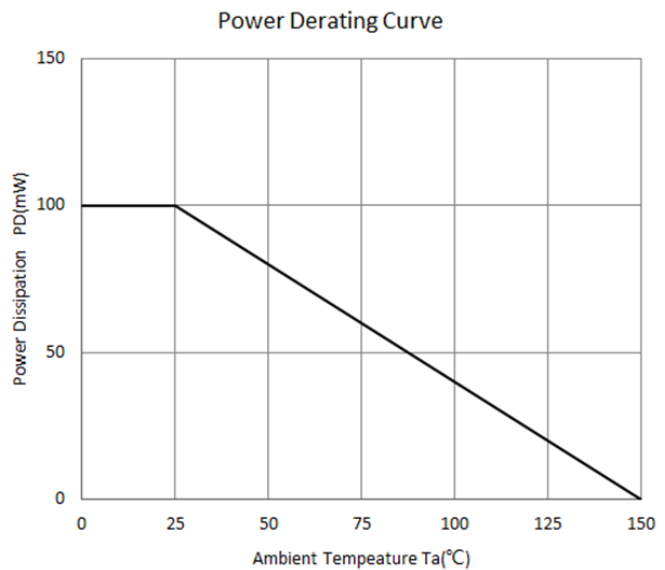
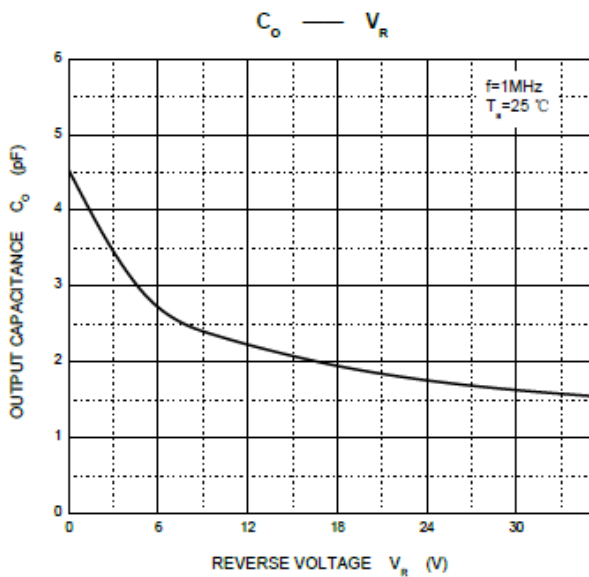
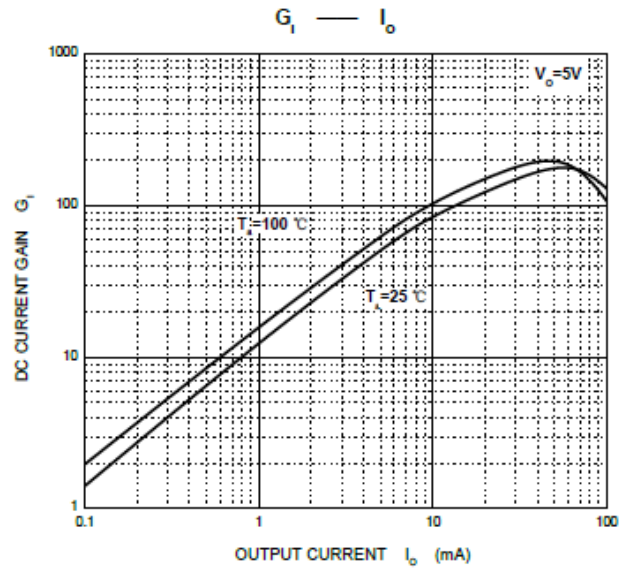
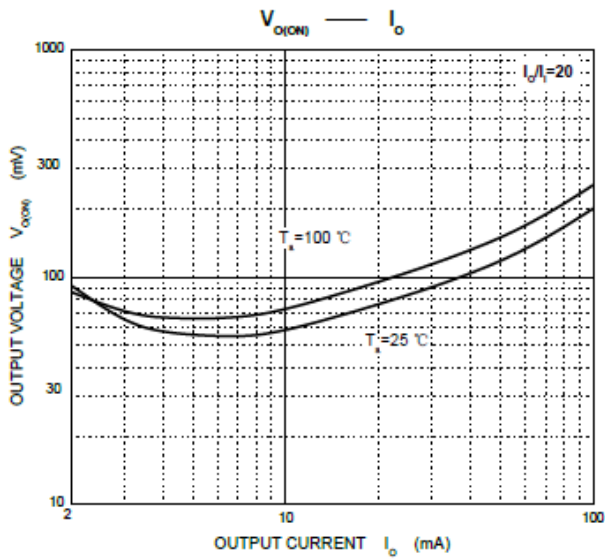
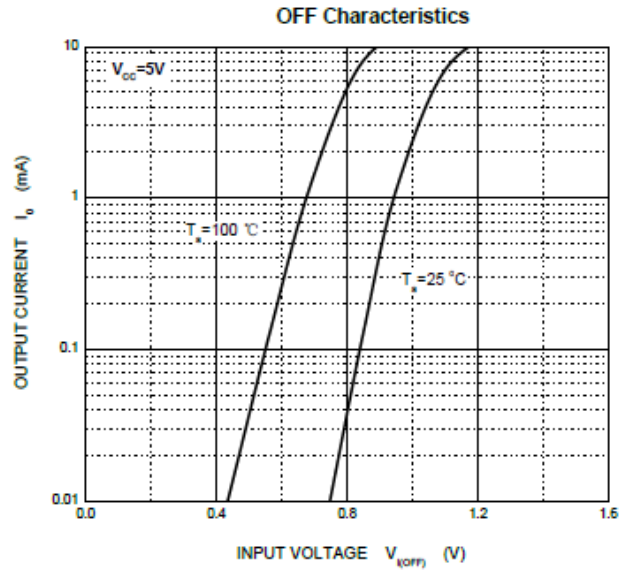
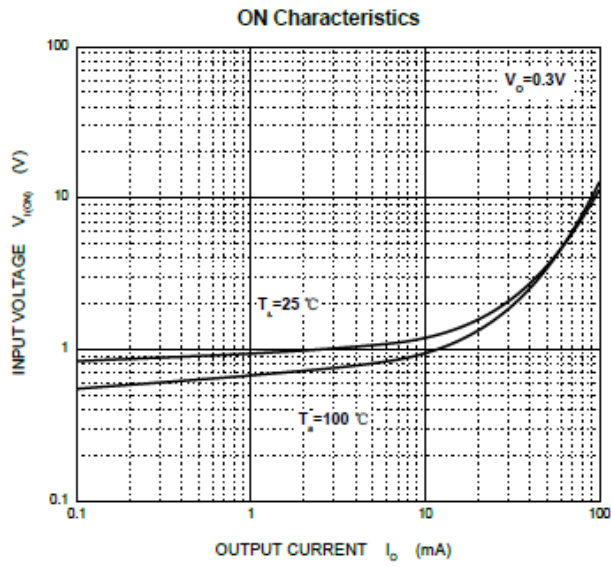
| ITEM | SYMBOL | UNIT | CONDITIONS | MIN | TYP | MAX |
|----------------------|--------------|-----------|--|------|-----|------|
| Input voltage | $V_{I(off)}$ | V | $V_{CC}=5V, I_o=100\mu A$ $V_o=0.3V, I_o=5mA$ | 0.5 | | |
| | $V_{I(on)}$ | V | | | | 1.3 |
| Output voltage | $V_{O(on)}$ | V | $I_o / I_i = 10mA / 0.5 mA$ | | | 0.3 |
| Input current | I_I | mA | $V_i=5V$ | | | 1.8 |
| Output current | $I_{O(off)}$ | μA | $V_{CC}=50V, V_i=0$ | | | 0.5 |
| DC current gain | G_I | | $V_o=5V, I_o = 10mA$ | 80 | | |
| Input resistance | R_1 | $k\Omega$ | | 3.29 | 4.7 | 6.11 |
| Resistance ratio | R_2/R_1 | | | 8 | 10 | 12 |
| Transition frequency | f_T | MHz | $V_o=10V, I_o=5mA, f=100MHz$ | | 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 |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| DTC143ZM | F2 | Approximate 0.0013 | 8000 | 80000 | 320000 | 7" reel |



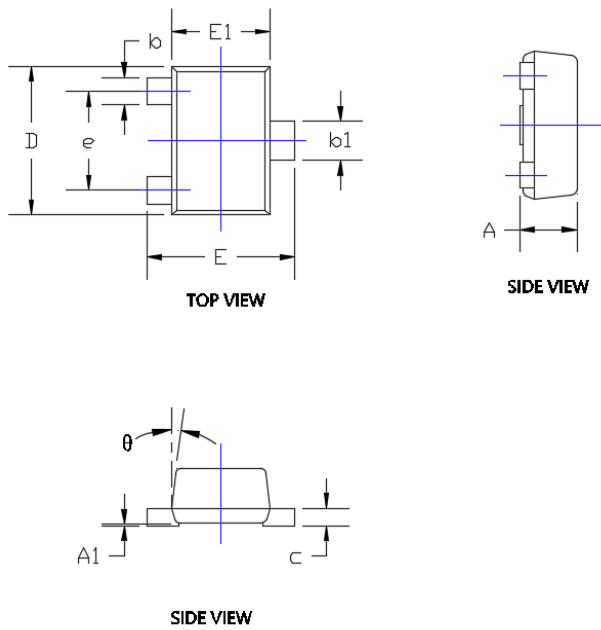
■ Characteristics (Typical)





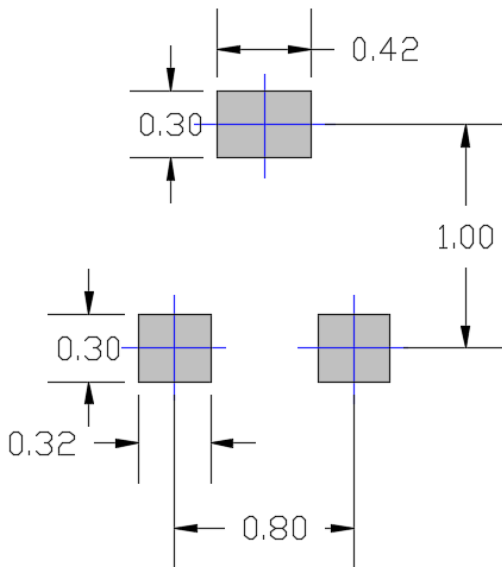
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■SOT-723 Package Outline Dimensions



| SYMBOL | DIMENSIONS | | | |
|----------|------------|-------|------------|-------|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.017 | 0.022 | 0.430 | 0.550 |
| A1 | 0.000 | 0.002 | 0.000 | 0.050 |
| b | 0.007 | 0.011 | 0.170 | 0.270 |
| b1 | 0.011 | 0.015 | 0.270 | 0.370 |
| c | 0.003 | 0.008 | 0.080 | 0.200 |
| D | 0.045 | 0.049 | 1.150 | 1.250 |
| E | 0.045 | 0.049 | 1.150 | 1.250 |
| E1 | 0.030 | 0.033 | 0.750 | 0.850 |
| e | 0.031TYP. | | 0.800TYP. | |
| θ | 7°REF. | | 7°REF. | |

■SOT-723 Suggested Pad Layout



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.



DTC143ZM

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