

Features

- Built-In Bias Resistors Enable the Configuration of an Inverter Circuit Without Connecting External Input Resistors
- The Bias Resistors Consist of Thin-Film Resistors With Complete Isolation to Allow Negative Biasing of the Input. They Also Have the Advantage of Almost Completely Eliminating Parasitic Effects
- Only the On/Off Conditions Need to Be Set For Operation, Making Device Design Easy
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

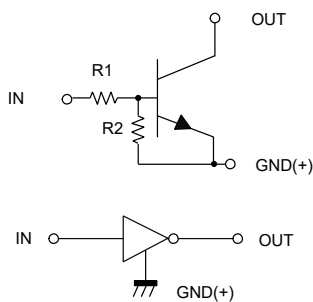
Maximum Ratings @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Unit |
|----------------------|-----------|-----|-----|-----|------|
| Supply Voltage | V_{CC} | --- | 50 | --- | V |
| Input Voltage | V_{IN} | -5 | --- | 30 | V |
| Output Current | I_o | --- | 100 | --- | mA |
| Power Dissipation | P_D | --- | 100 | --- | mW |
| Junction Temperature | T_J | --- | --- | 150 | °C |
| Storage Temperature | T_{stg} | -55 | --- | 150 | °C |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

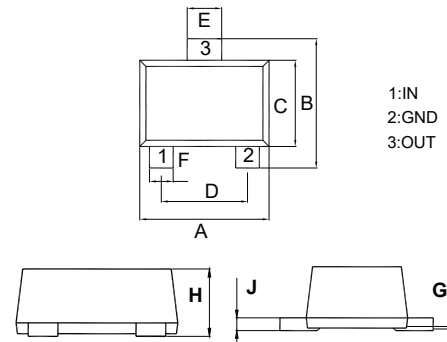
Device Marking: E23

Internal Structure



NPN Digital Transistor

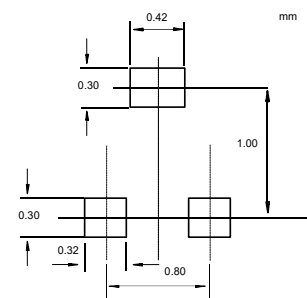
SOT-723



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.043 | 0.051 | 1.10 | 1.30 | |
| B | 0.043 | 0.051 | 1.10 | 1.30 | |
| C | 0.028 | 0.035 | 0.70 | 0.90 | |
| D | 0.031 | | 0.80 | | TYP. |
| E | 0.009 | 0.017 | 0.22 | 0.42 | |
| F | 0.005 | 0.013 | 0.12 | 0.32 | |
| G | 0.000 | 0.002 | 0.00 | 0.05 | |
| H | 0.017 | 0.021 | 0.43 | 0.54 | |
| J | 0.003 | 0.006 | 0.08 | 0.15 | |

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|----------------------|--------------|------|-----|------|------------|----------------------------------|
| Input Voltage | $V_{I(off)}$ | 0.5 | --- | --- | V | $V_{CC}=5V, I_O=100\mu A$ |
| | $V_{I(on)}$ | --- | --- | 1.3 | V | $V_O=0.3V, I_O=5mA$ |
| Output Voltage | $V_{O(on)}$ | --- | 0.1 | 0.3 | V | $I_O=5mA, I_I=0.25mA$ |
| Input Current | I_I | --- | --- | 1.8 | mA | $V_I=5V$ |
| Output Current | $I_{O(off)}$ | --- | --- | 0.5 | μA | $V_{CC}=50V, V_I=0$ |
| DC Current Gain | G_I | 80 | --- | --- | | $V_O=5V, I_O=10mA$ |
| Input Resistance | R_1 | 3.29 | 4.7 | 6.11 | K Ω | |
| Resistance Ratio | R_2/R_1 | 8 | 10 | 12 | | |
| Transition Frequency | f_T | --- | 250 | --- | MHz | $V_{CE}=10V, I_E=-5mA, f=100MHz$ |

Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

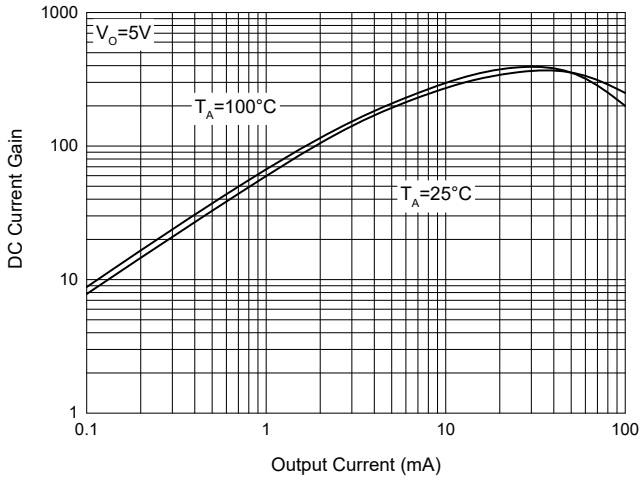


Fig. 2 - Input Voltage (on) Characteristics

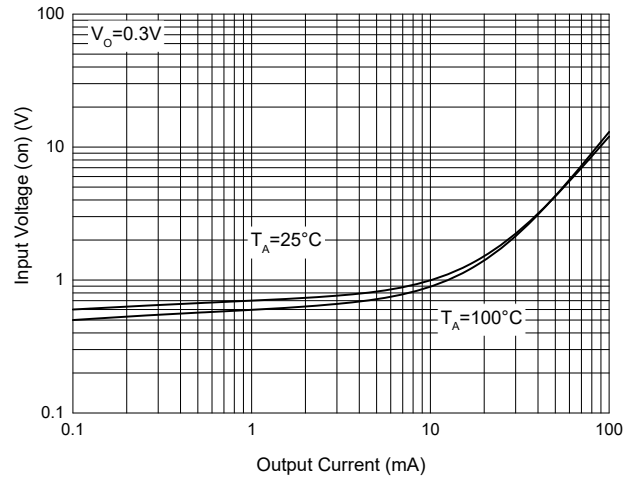


Fig. 3 - Input Voltage (off) Characteristics

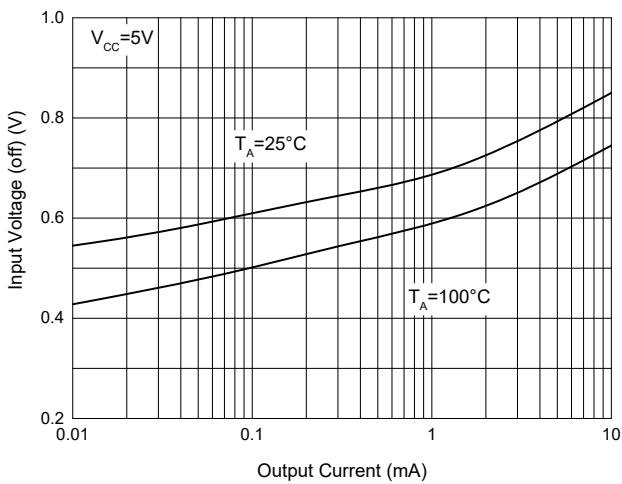


Fig. 4 - Output Voltage Characteristics

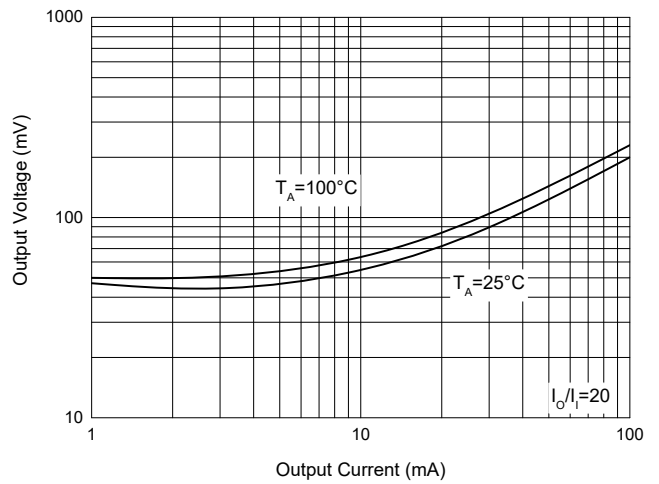
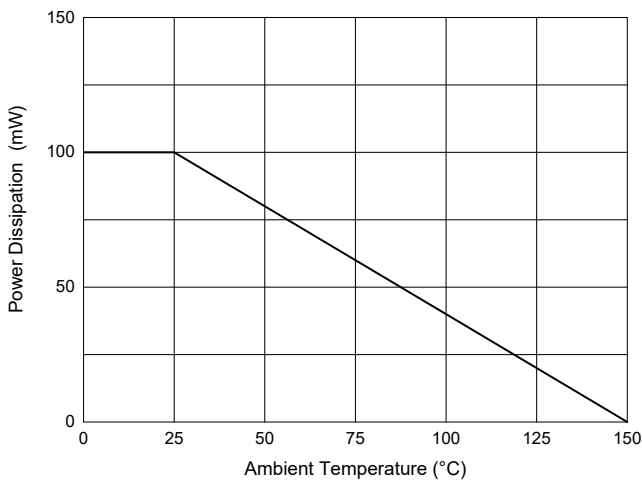


Fig. 5 - Power Derating Curve



Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:8Kpcs/Reel |

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