

## 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)

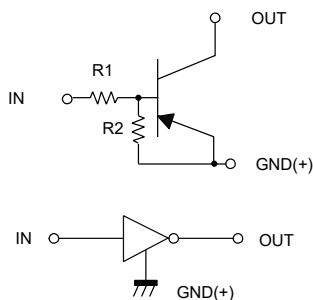
## Maximum Ratings @ 25°C Unless Otherwise Noted

| Parameter            | Symbol    | Min | Typ | Max | Unit |
|----------------------|-----------|-----|-----|-----|------|
| Supply Voltage       | $V_{CC}$  | --- | -50 | --- | V    |
| Input Voltage        | $V_{IN}$  | -40 | --- | 6   | V    |
| Output Current       | $I_o$     | --- | -70 | --- | mA   |
| Power Dissipation    | $P_D$     | --- | 100 | --- | mW   |
| Junction Temperature | $T_J$     | -55 | --- | 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.

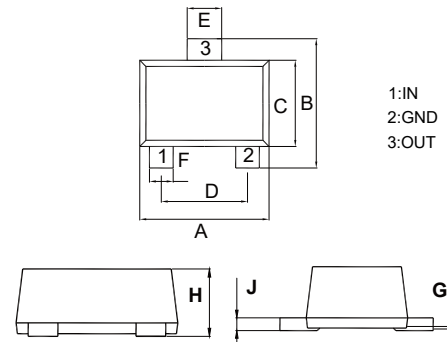
## Device Marking: 54

### Internal Structure



# PNP Digital Transistor

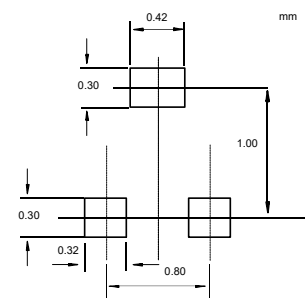
## SOT-723



### 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        | $V_{I(off)}$ | -0.3 | ---  | ---   | V          | $V_{CC}=-5V, I_O=-100\mu A$     |
|                      | $V_{I(on)}$  | ---  | ---  | -1.4  | V          | $V_O=-0.3V, I_O=-1mA$           |
| Output Voltage       | $V_{O(on)}$  | ---  | -0.1 | -0.3  | V          | $I_O=-5mA, I_I=-0.25mA$         |
| Input Current        | $I_I$        | ---  | ---  | -0.88 | mA         | $V_I=-5V$                       |
| Output Current       | $I_{O(off)}$ | ---  | ---  | -0.5  | $\mu A$    | $V_{CC}=-50V, V_I=0$            |
| DC Current Gain      | $G_1$        | 68   | ---  | ---   |            | $V_O=-5V, I_O=-5mA$             |
| Input Resistance     | $R_1$        | 7    | 10   | 13    | K $\Omega$ |                                 |
| Resistance Ratio     | $R_2/R_1$    | 3.7  | 4.7  | 5.7   |            |                                 |
| Transition Frequency | $f_T$        | ---  | 250  | ---   | MHz        | $V_{CE}=10V, I_E=5mA, f=100MHz$ |

Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

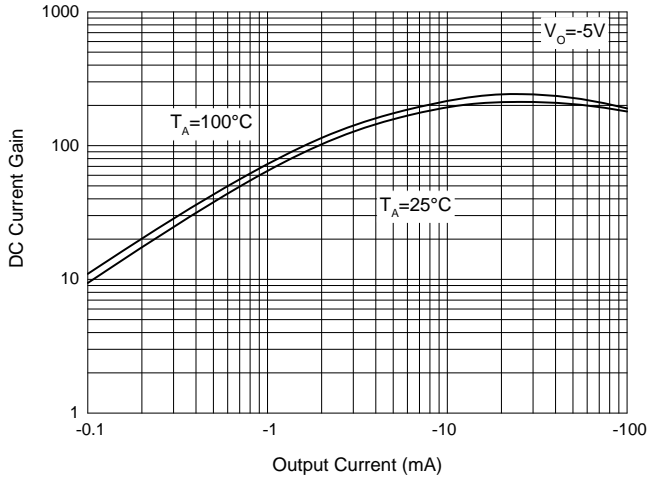


Fig. 2 - Input Voltage (on) Characteristics

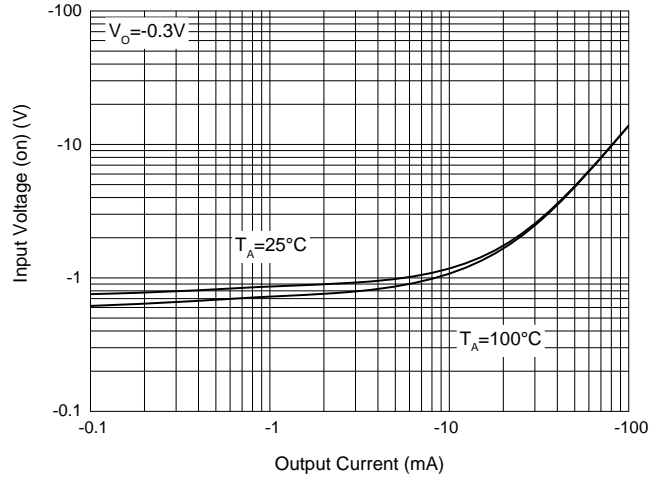


Fig. 3 - Input Voltage (off) Characteristics

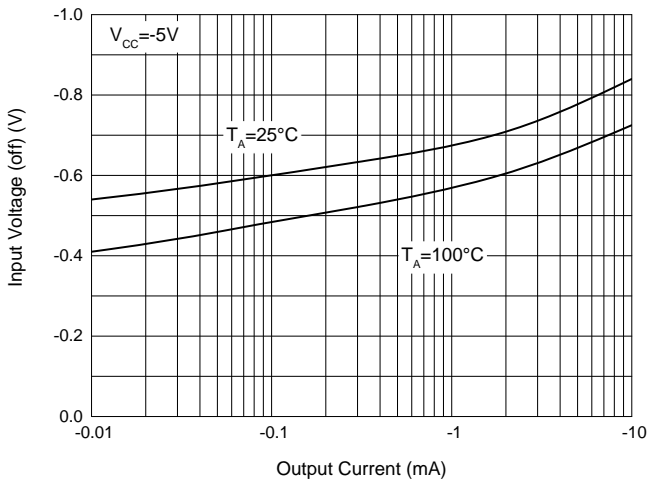


Fig. 4 - Output Voltage Characteristics

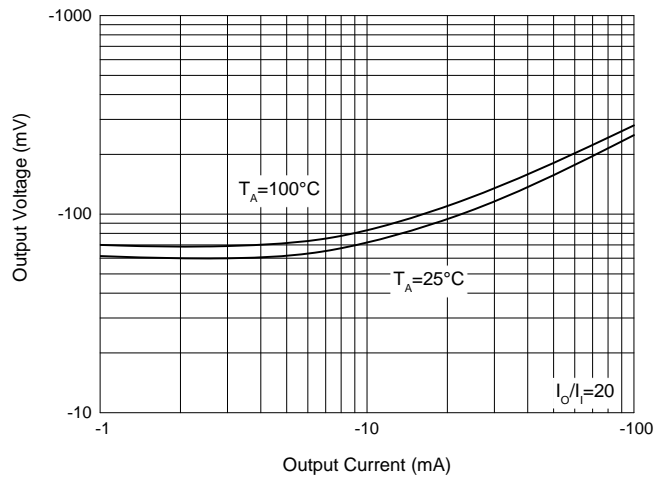
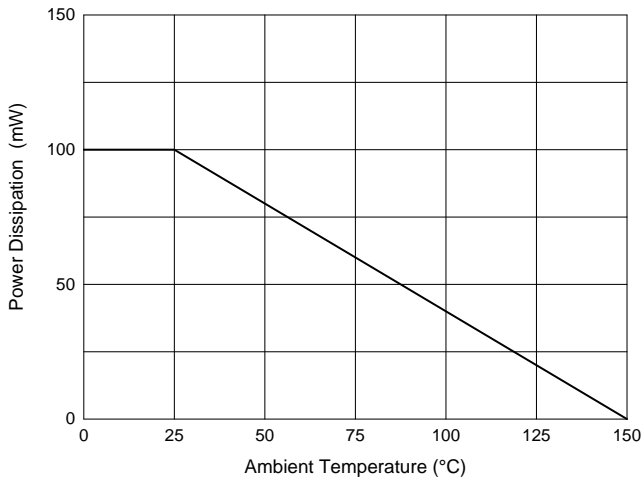


Fig. 5 - Power Derating Curve



## Ordering Information

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

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