# WILLAS

RoHS COMPLIANT

## PNP Digital Transistor

**DTA123JE**

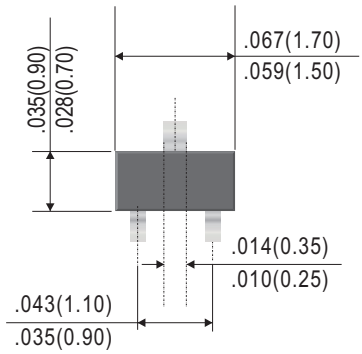
## Features

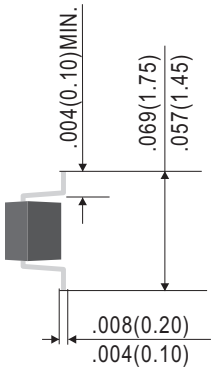
- **Pb-Free package is available**

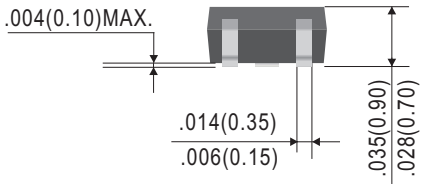
  RoHS product for packing code suffix ”G”

  Halogen free product for packing code suffix “H”
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- 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

SOT-523




Dimensions in inches and (millimeters)

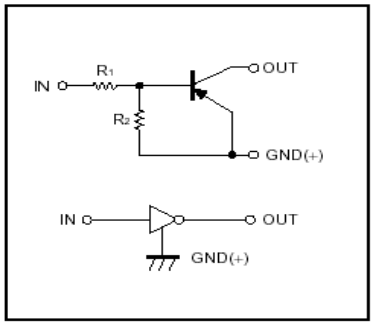
### Absolute maximum ratings @ 25℃

| Symbol | Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| $V_{CC}$ | Supply voltage | --- | -50 | --- | V |
| $V_{IN}$ | Input voltage | -12 | --- | 5 | V |
| $I_O$<br>$I_{C(MAX)}$ | Output current | --- | -100<br>-100 | --- | mA |
| $P_d$ | Power dissipation | --- | 150 | --- | mW |
| $T_j$ | Junction temperature | --- | 150 | --- | ℃ |
| $T_{stg}$ | Storage temperature | -55 | --- | 150 | ℃ |

### Electrical Characteristics @ 25℃

| Symbol | Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| $V_{I(off)}$ | Input voltage ($V_{CC}$=-5V, $I_O$=-100 μ A) | -0.5 | --- | --- | V |
| $V_{I(on)}$ | ($V_O$=-0.3V, $I_O$=-5mA) | --- | --- | -1.1 | V |
| $V_{O(on)}$ | Output voltage ($I_O$/$I_I$=-5mA/-0.25mA | --- | --- | -0.3 | V |
| $I_I$ | Input current ($V_I$=-5V) | --- | --- | -3.6 | mA |
| $I_{O(off)}$ | Output current ($V_{CC}$=-50V, $V_I$=0) | --- | --- | -0.5 | μ A |
| $G_I$ | DC current gain ($V_O$=-5V, $I_O$=-10mA) | 80 | --- | --- | |
| $R_1$ | Input resistance | 1.54 | 2.2 | 2.86 | K Ω |
| $R_2/R_1$ | Resistance ratio | 17 | 21 | 26 | |
| $f_T$ | Transition frequency ($V_O$=-10V, $I_O$=5mA, f=100MHz) | --- | 250 | --- | MHz |

●Equivalent circuit




*Marking: E32

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●**Electrical characteristic curves**

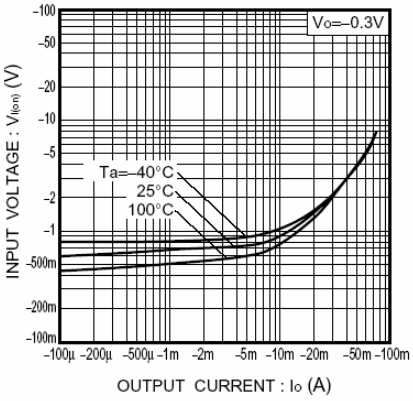


Fig.1 Input voltage vs. output current (ON characteristics)

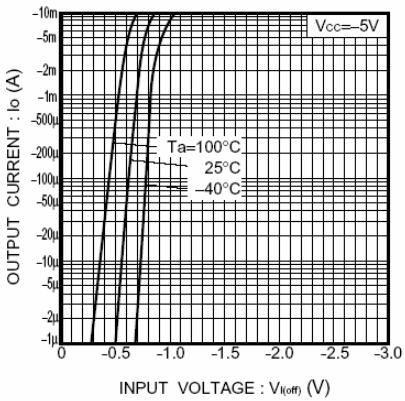


Fig.2 Output current vs. input voltage (OFF characteristics)

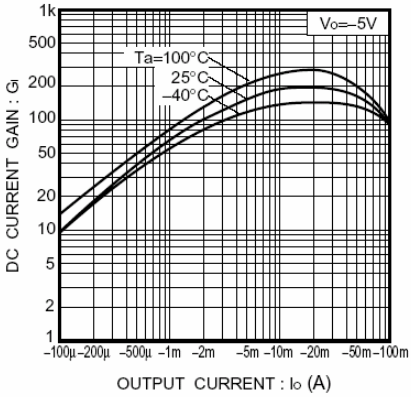


Fig.3 DC current gain vs. output current

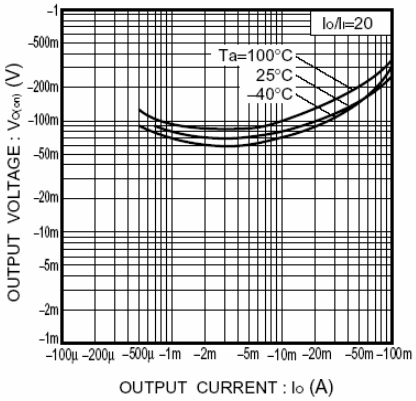


Fig.4 Output voltage vs. output current