



Micro Commercial Components



Micro Commercial Components  
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## DTA143EE

### PNP Digital Transistors

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- 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
- 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 available upon request by adding suffix "-HF"

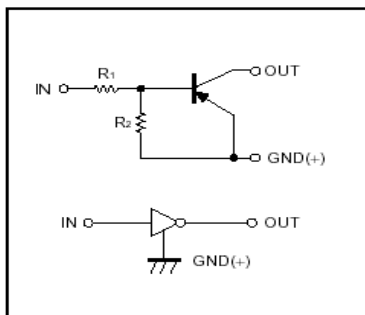
#### Absolute maximum ratings @ 25°C

| Symbol       | Parameter            | Min | Typ  | Max | Unit |
|--------------|----------------------|-----|------|-----|------|
| $V_{CC}$     | Supply voltage       | --- | -50  | --- | V    |
| $V_{IN}$     | Input voltage        | -30 | ---  | 10  | V    |
| $I_O$        | Output current       | --- | -100 | --- | mA   |
| $I_{C(MAX)}$ |                      | --- | -100 | --- | mA   |
| $P_d$        | Power dissipation    | --- | 150  | --- | mW   |
| $T_j$        | Junction temperature | --- | 150  | --- | °C   |
| $T_{stg}$    | Storage temperature  | -55 | ---  | 150 | °C   |

#### Electrical Characteristics @ 25°C

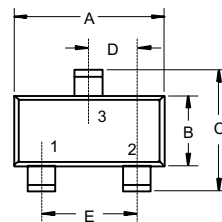
| Symbol       | Parameter                                                       | Min  | Typ | Max  | Unit       |
|--------------|-----------------------------------------------------------------|------|-----|------|------------|
| $V_{I(off)}$ | Input voltage ( $V_{CC}=-5V$ , $I_O=-100\mu A$ )                | ---  | --- | -0.5 | V          |
| $V_{I(on)}$  | ( $V_O=-0.3V$ , $I_O=-20mA$ )                                   | -3.0 | --- | ---  | V          |
| $V_{O(on)}$  | Output voltage ( $I_O/I_I=-10mA/-0.5mA$ )                       | ---  | --- | -0.3 | V          |
| $I_I$        | Input current ( $V_I=-5V$ )                                     | ---  | --- | -1.8 | mA         |
| $I_{O(off)}$ | Output current ( $V_{CC}=-50V$ , $V_I=0$ )                      | ---  | --- | -0.5 | $\mu A$    |
| $G_I$        | DC current gain ( $V_O=-5V$ , $I_O=-10mA$ )                     | 30   | --- | ---  |            |
| $R_1$        | Input resistance                                                | 3.29 | 4.7 | 6.11 | K $\Omega$ |
| $R_2/R_1$    | Resistance ratio                                                | 0.8  | 1.0 | 1.2  |            |
| $f_T$        | Transition frequency ( $V_{CE}=-10V$ , $I_E=5mA$ , $f=100MHz$ ) | ---  | 250 | ---  | MHz        |

#### Equivalent circuit

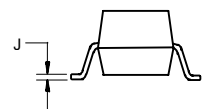
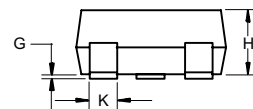


\*Marking: 13

### SOT-523



1. IN  
2. GND  
3. OUT



| DIM | INCHES       |      | MM           |      | NOTE |
|-----|--------------|------|--------------|------|------|
|     | MIN          | MAX  | MIN          | MAX  |      |
| A   | .059         | .067 | 1.50         | 1.70 |      |
| B   | .030         | .033 | 0.75         | 0.85 |      |
| C   | .057         | .069 | 1.45         | 1.75 |      |
| D   | .020 Nominal |      | 0.50 Nominal |      |      |
| E   | .035         | .043 | 0.90         | 1.10 |      |
| G   | .000         | .004 | .000         | .100 |      |
| H   | .028         | .031 | .70          | 0.80 |      |
| J   | .004         | .008 | .100         | .200 |      |
| K   | .010         | .014 | .25          | .35  |      |

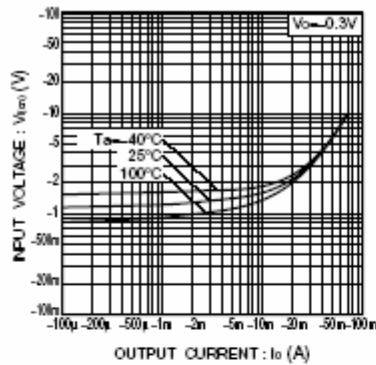


Fig.1 Input voltage vs. output current (ON characteristics)

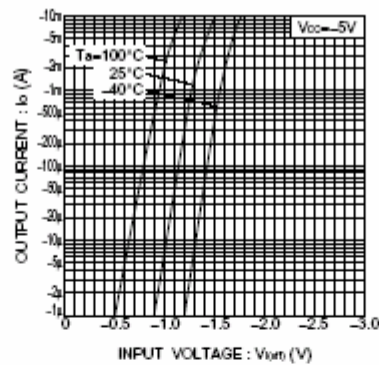


Fig.2 Output current vs. input voltage (OFF characteristics)

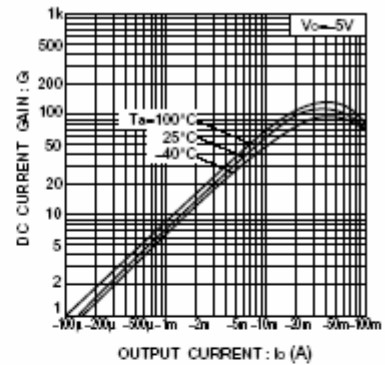


Fig.3 DC current gain vs. output current

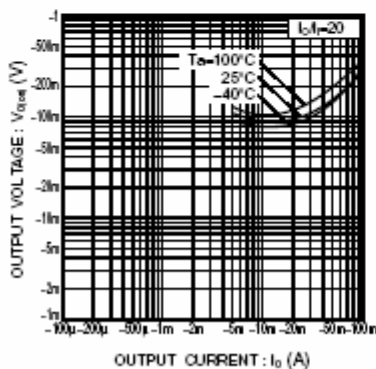


Fig.4 Output voltage vs. output current

## Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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