

## 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"

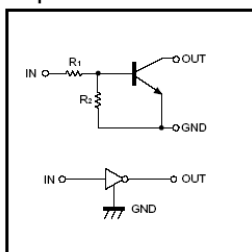
### Absolute maximum ratings @ 25°C

| Symbol                | Parameter            | Min | Typ       | Max | Unit |
|-----------------------|----------------------|-----|-----------|-----|------|
| $V_{CC}$              | Supply voltage       | --- | 50        | --- | V    |
| $V_{IN}$              | Input voltage        | -10 | ---       | 40  | V    |
| $I_O$<br>$I_{C(MAX)}$ | Output current       | --- | 30<br>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          |
| $V_{I(on)}$  | Input voltage ( $V_O=0.2V$ , $I_O=5mA$ )                       | 3.0  | --- | ---  | V          |
| $V_{O(on)}$  | Output voltage ( $I_O/I_I=10mA/0.5mA$ )                        | ---  | 0.1 | 0.3  | V          |
| $I_I$        | Input current ( $V_I=5V$ )                                     | ---  | --- | 0.36 | mA         |
| $I_{O(off)}$ | Output current ( $V_{CC}=50V$ , $V_I=0$ )                      | ---  | --- | 0.5  | $\mu A$    |
| $G_I$        | DC current gain ( $V_O=5V$ , $I_O=5mA$ )                       | 56   | --- | ---  |            |
| $R_I$        | Input resistance                                               | 15.4 | 22  | 28.6 | 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

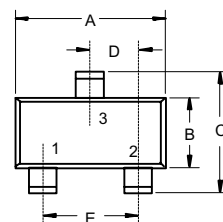


\*Marking: 25

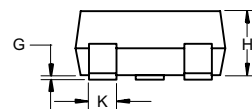
## DTC124EE

## NPN Digital Transistors

### SOT-523



1. IN  
2. GND  
3. OUT



#### DIMENSIONS

| 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  |      |

## 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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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)