



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# DTC124EKA

## 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

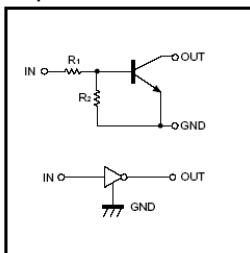
### Absolute maximum ratings @ 25°C

| Symbol       | Parameter            | Min | Typ | Max | Unit |
|--------------|----------------------|-----|-----|-----|------|
| $V_{CC}$     | Supply voltage       | --- | 50  | --- | V    |
| $V_{IN}$     | Input voltage        | -10 | --- | 40  | V    |
| $I_O$        | Output current       | --- | 30  | --- | mA   |
| $I_{C(MAX)}$ |                      | --- | 100 | --- | mA   |
| $P_d$        | Power dissipation    | --- | 200 | --- | mW   |
| $T_j$        | Junction temperature | --- | 150 | --- | °C   |
| $T_{stg}$    | Storage temperature  | -55 | --- | 150 | °C   |

### Electrical Characteristics @ 25°C

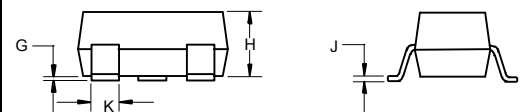
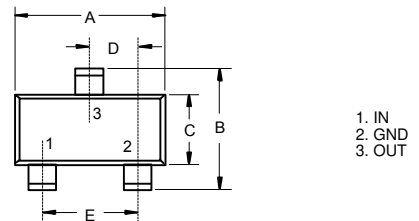
| Symbol       | Parameter  | Min  | Typ | Max  | Unit       |
|--------------|--|------|-----|------|------------|
| $V_{I(off)}$ | Input voltage ( $V_{CC}=5V, I_O=100 \mu A$ )             | ---  | --- | 0.5  | V          |
| $V_{I(on)}$  | ( $V_O=0.2V, I_O=5mA$ )                                  | 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



## NPN Digital Transistors

### SOT-23-3L



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .113   | .117  | 2.87 | 2.97 |      |
| B   | .108   | .112  | 2.75 | 2.85 |      |
| C   | .061   | .065  | 1.55 | 1.65 |      |
| D   | .036   | .038  | .925 | .975 |      |
| E   | .073   | .077  | 1.85 | 1.95 |      |
| G   | .0016  | .0039 | .04  | .100 |      |
| H   | .044   | .049  | 1.12 | 1.25 |      |
| J   | .006   | .007  | .14  | .17  |      |
| K   | .013   | .015  | .34  | .37  |      |

#### Suggested Solder Pad Layout

