



Micro Commercial Components

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 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

DTC114YUA

Features

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 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

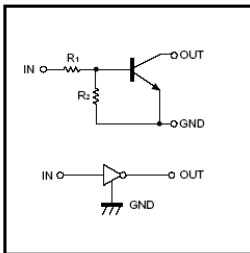
Absolute maximum ratings @ 25°C

| Symbol | Parameter | Min | Typ | Max | Unit |
|--------------|----------------------|-----|-----|-----|------|
| V_{CC} | Supply voltage | --- | 50 | --- | V |
| V_{IN} | Input voltage | -6 | --- | 40 | V |
| I_o | Output current | --- | 70 | --- | mA |
| $I_{C(MAX)}$ | | --- | 100 | --- | |
| 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 ($V_{CC}=5V, I_o=100 \mu A$) | --- | --- | 0.3 | V |
| $V_{I(on)}$ | ($V_o=0.3V, I_o=1mA$) | 1.4 | --- | --- | V |
| $V_{O(on)}$ | Output voltage ($I_o/I_i=5mA/0.25mA$) | --- | 0.1 | 0.3 | V |
| I_i | Input current ($V_i=5V$) | --- | --- | 0.88 | mA |
| $I_{O(off)}$ | Output current ($V_{CC}=50V, V_i=0$) | --- | --- | 0.5 | μA |
| G_I | DC current gain ($V_o=5V, I_o=5mA$) | 68 | --- | --- | |
| R_1 | Input resistance | 7.0 | 10 | 13 | K Ω |
| R_2/R_1 | Resistance ratio | 3.7 | 4.7 | 5.7 | |
| f_T | Transition frequency ($V_{CE}=10V, I_E=5mA, f=100MHz$) | --- | 250 | --- | MHz |

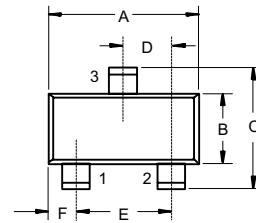
Equivalent circuit



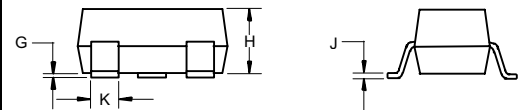
*Marking: 64

NPN Digital Transistors

SOT-323

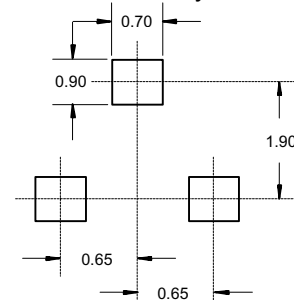


1: IN
 2: GND
 3: OUT



| DIM | INCHES | | MM | | NOTE |
|-----|--------------|------|-------------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .071 | .087 | 1.80 | 2.20 | |
| B | .045 | .053 | 1.15 | 1.35 | |
| C | .079 | .087 | 2.00 | 2.20 | |
| D | .026 Nominal | | 0.65Nominal | | |
| E | .047 | .055 | 1.20 | 1.40 | |
| F | .012 | .016 | .30 | .40 | |
| G | .000 | .004 | .000 | .100 | |
| H | .035 | .039 | .90 | 1.00 | |
| J | .004 | .010 | .100 | .250 | |
| K | .012 | .016 | .30 | .40 | |

Suggested Solder Pad Layout





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Ordering Information

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

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