

NPN Digital Transistor

DTC114YUA

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
- 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

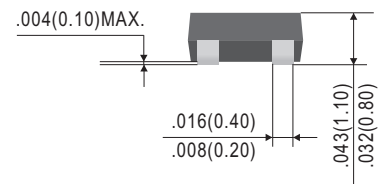
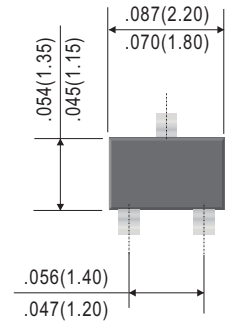
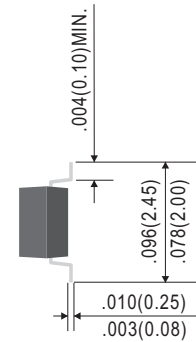
Absolute maximum ratings @ 25°C

| 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)} | Output current | --- | 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

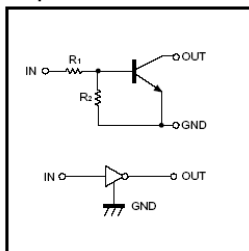
| Symbol | Parameter | Min | Typ | Max | Unit |
|--------------------------------|---|-----|-----|------|------|
| V _{I(off)} | Input voltage (V _{CC} =5V, I _O =100 μA) | 0.3 | --- | --- | V |
| V _{I(on)} | Input voltage (V _O =0.3V, I _O =1mA) | --- | --- | 1.4 | V |
| V _{O(on)} | Output voltage (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 ₁ | DC current gain (V _O =5V, I _O =5mA) | 68 | --- | --- | --- |
| R ₁ | Input resistance | 7.0 | 10 | 13 | KΩ |
| R ₂ /R ₁ | Resistance ratio | 3.7 | 4.7 | 5.7 | --- |
| f _T | Transition frequency (V _O =10V, I _O =5mA, f=100MHz) | --- | 250 | --- | MHz |

SOT-323



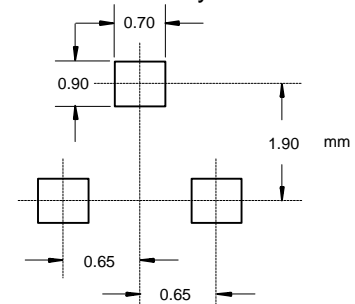
Dimensions in inches and (millimeters)

Equivalent circuit



*Marking: 64

Suggested Solder Pad Layout



NPN Digital Transistor**Ordering Information:**

| Device PN | Packing |
|--|-------------------------|
| DTC114YUA -T ⁽¹⁾ G ⁽²⁾ -WS | Tape& Reel: 3 Kpcs/Reel |

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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