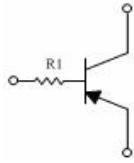


Small Signal Diode

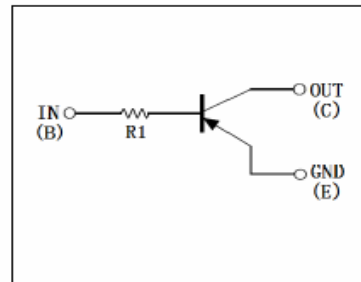


DTA114 TM/TE/TUA/TCA/TSA PNP Digital Transistor

Features

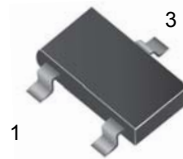
- ◇ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistor (see equivalent circuit).
- ◇ The bias resistors consist of thin -film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- ◇ Only the on/off conditions need to be set for operation, marking device design easy.
- ◇ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code.

• Equivalent Circuit



Ordering Information

| Package | Part No. | Packing | Marking |
|---------|------------|--------------|---------|
| SOT-723 | DTA114 TM | 8K / 7" Reel | 94 |
| SOT-523 | DTA114 TE | 3K / 7" Reel | 94 |
| SOT-323 | DTA114 TUA | 3K / 7" Reel | 94 |
| SOT-23 | DTA114 TCA | 3K / 7" Reel | 94 |
| TO-92S | DTA114 TSA | 3K / 7" Reel | |



SOT-723/SOT-523 SOT-323/SOT-23

- 1.IN
- 2.GND
- 3.OUT



TO-92S

- 1.GND
- 2.OUT
- 3.IN

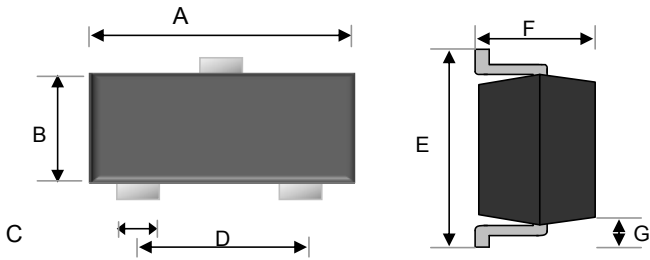
Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

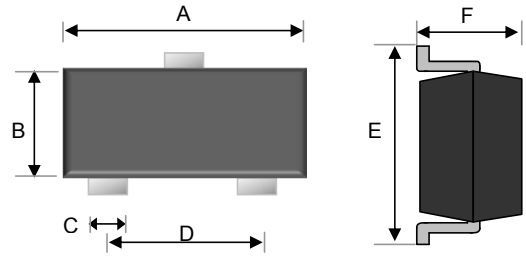
| Type Number | Symbol | Value | | | | | Units |
|----------------------------------------|----------------|--------------|-----|-----|-----|-----|-------|
| | | TM | TE | TUA | TCA | TSA | |
| Power Dissipation | PD | 100 | 150 | 200 | | 300 | mW |
| Collector-Emitter Voltage | V_{CBO} | -50 | | | | | V |
| Emitter-Base Voltage | V_{CEO} | -50 | | | | | V |
| Emitter-Base Voltage | V_{EBO} | -5 | | | | | |
| Collector Current | I_C | -100 | | | | | mA |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to + 150 | | | | | °C |

Notes:1. Valid provided that electrodes are kept at ambient temperature

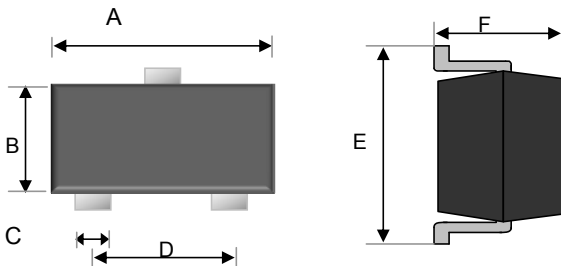
| Parameter | Symbol | Min | Typ | Max | Condition | Unit |
|-------------------------------------|---------------|-----|-----|------|-----------------------------------------|------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | -50 | | | $I_C = -50\mu A, I_E = 0$ | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | -50 | | | $I_C = -1mA, I_B = 0$ | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | -5 | | | $I_E = -50\mu A, I_C = 0$ | V |
| Collector cut-off current | I_{CBO} | | | -0.5 | $V_{CB} = -50V, I_E = 0$ | μA |
| Emitter cut-off current | I_{EBO} | | | -0.5 | $V_{EB} = -4V, I_C = 0$ | μA |
| DC Current Gain | $V_{CE(sat)}$ | | | -0.3 | $I_C = -10mA, I_B = -1mA$ | V |
| Input Resistance | h_{FE} | 100 | 250 | 600 | $V_{CE} = -5V, I_C = -1mA$ | |
| Resistance Ratio | R_1 | 7 | 10 | 13 | | K Ω |
| Transition Frequency | f_T | | 250 | | $V_{CE} = -10V, I_E = -5mA, f = 100MHz$ | MHz |

DTA114 TM/TE/TUA/TCA/TSA
PNP Digital Transistor
SOT-23


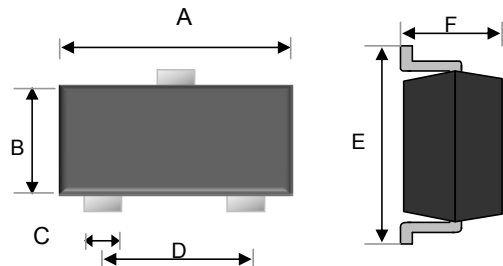
| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 2.80 | 3.00 | 0.11 | 0.12 |
| B | 1.20 | 1.40 | 0.05 | 0.06 |
| C | 0.30 | 0.50 | 0.01 | 0.02 |
| D | 1.80 | 2.00 | 0.07 | 0.08 |
| E | 2.25 | 2.55 | 0.09 | 0.10 |
| F | 0.90 | 1.20 | 0.04 | 0.04 |
| G | 0.550 REF | | 0.022 REF | |

SOT-323


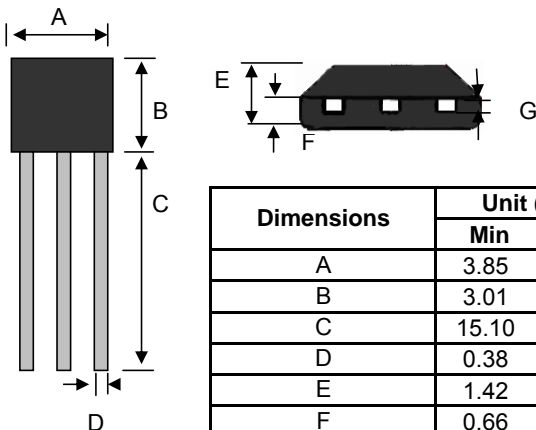
| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.90 | 2.10 | 0.07 | 0.08 |
| B | 1.15 | 1.35 | 0.05 | 0.05 |
| C | 0.25 | 0.35 | 0.01 | 0.01 |
| D | 1.20 | 1.40 | 0.05 | 0.06 |
| E | 2.00 | 2.20 | 0.08 | 0.09 |
| F | 0.80 | 1.00 | 0.03 | 0.04 |

SOT-523


| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.50 | 1.70 | 0.06 | 0.07 |
| B | 0.70 | 0.80 | 0.03 | 0.03 |
| C | 0.25 | 0.35 | 0.01 | 0.01 |
| D | 0.90 | 1.10 | 0.04 | 0.04 |
| E | 1.50 | 1.70 | 0.06 | 0.07 |
| F | 0.70 | 0.90 | 0.03 | 0.04 |

SOT-723


| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.15 | 1.25 | 0.05 | 0.05 |
| B | 0.75 | 0.85 | 0.03 | 0.03 |
| C | 0.17 | 0.27 | 0.01 | 0.01 |
| D | 0.8 TYP | | 0.31 TYP | |
| E | 1.15 | 1.25 | 0.05 | 0.05 |
| F | | 0.50 | | 0.02 |

TO-92S


| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|-------|-------------|------|
| | Min | Max | Min | Max |
| A | 3.85 | 4.15 | 0.15 | 0.16 |
| B | 3.01 | 3.31 | 0.12 | 0.13 |
| C | 15.10 | 15.50 | 0.59 | 0.61 |
| D | 0.38 | 0.55 | 0.01 | 0.02 |
| E | 1.42 | 1.62 | 0.06 | 0.06 |
| F | 0.66 | 0.86 | 0.03 | 0.03 |
| G | 0.36 | 0.51 | 0.01 | 0.02 |