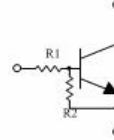


Small Signal Diode

Features

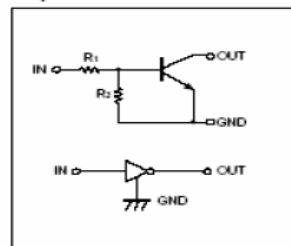
- ◇ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistor (see equivalent circuit).
- ◇ The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost 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.



Ordering Information

| Package | Part No. | Packing | Marking |
|---------|------------|--------------|---------|
| SOT-723 | DTA123 JM | 8K / 7" Reel | E32 |
| SOT-523 | DTA123 JE | 3K / 7" Reel | E32 |
| SOT-323 | DTA123 JUA | 3K / 7" Reel | 132 |
| SOT-23 | DTA123 JCA | 3K / 7" Reel | E32 |
| TO-92S | DTA123 JSA | 3K / 7" Reel | |

● **Equivalent circuit**



Maximum Ratings and Electrical Characteristics

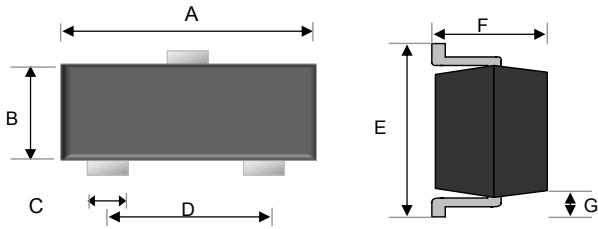
Rating at 25°C ambient temperature unless otherwise specified.

| Type Number | Symbol | Value | | | | Units |
|--|-----------------------------------|--------------|-----|---------|-----|-------|
| | | JM | JE | JUA JCA | JSA | |
| Power Dissipation | PD | 100 | 150 | 200 | 300 | mW |
| Supply Voltage | V _{CC} | -50 | | | | V |
| Input Voltage | V _{IN} | -12 ~ -5 | | | | V |
| Output Current | I _O | -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

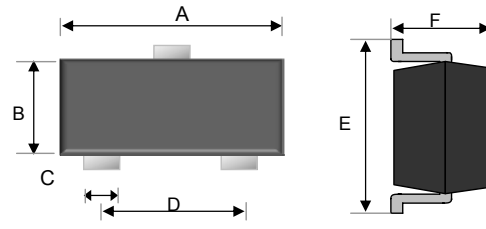
| Parameter | Symbol | Min | Typ | Max | Condition | Unit |
|----------------------|--------------------------------|------|------|------|--|------|
| Input Voltage | V _{I(off)} | -0.5 | | | V _{CC} =-5V, I _O =-100μA | V |
| | V _{I(on)} | | | -1.1 | V _O =-0.3V, I _O =-5mA | |
| Output Voltage | V _{O(on)} | | -0.1 | -0.3 | I _O /I _I =-5mA/-0.25mA | V |
| Input Current | I _I | | | -3.6 | V _I =-5V | mA |
| Output Current | I _{O (off)} | | | -0.5 | V _{CC} =-50V, V _I =0 | μA |
| DC Current Gain | G _I | 80 | | | V _O =-5V, I _O =-10mA | |
| Input Resistance | R ₁ | 1.54 | 2.2 | 2.86 | | KΩ |
| Resistance Ratio | R ₂ /R ₁ | 17 | 21 | 26 | | |
| Transition Frequency | f _T | | 250 | | V _O =-10V, I _O =-5mA, f=100MHz | MHz |

SOT-23



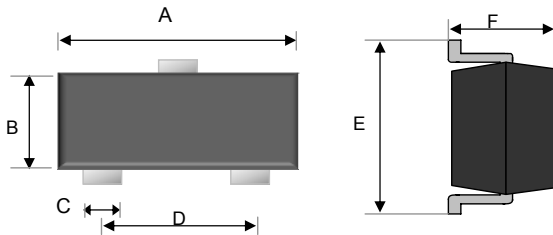
| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 2.80 | 3.00 | 0.11 | 0.12 |
| B | 1.20 | 1.40 | 0.05 | 0.06 |
| C | 0.30 | 0.50 | 0.01 | 0.02 |
| D | 1.80 | 2.00 | 0.07 | 0.08 |
| E | 2.25 | 2.55 | 0.09 | 0.10 |
| F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

SOT-323



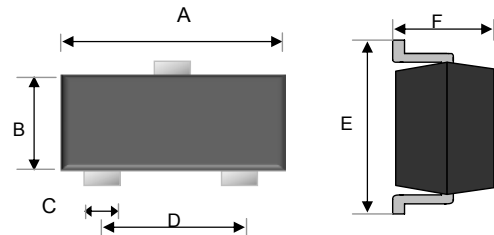
| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.90 | 2.10 | 0.07 | 0.08 |
| B | 1.15 | 1.35 | 0.05 | 0.05 |
| C | 0.25 | 0.35 | 0.01 | 0.01 |
| D | 1.20 | 1.40 | 0.05 | 0.06 |
| E | 2.00 | 2.20 | 0.08 | 0.09 |
| F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

SOT-523



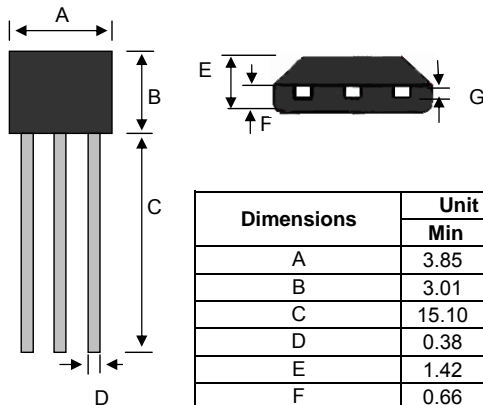
| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|------|
| | Min | Max | Min | Max |
| A | 1.50 | 1.70 | 0.06 | 0.07 |
| B | 0.70 | 0.80 | 0.03 | 0.03 |
| C | 0.25 | 0.35 | 0.01 | 0.01 |
| D | 0.90 | 1.10 | 0.04 | 0.04 |
| E | 1.50 | 1.70 | 0.06 | 0.07 |
| F | 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 | | 0.31TYP | |
| 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 |