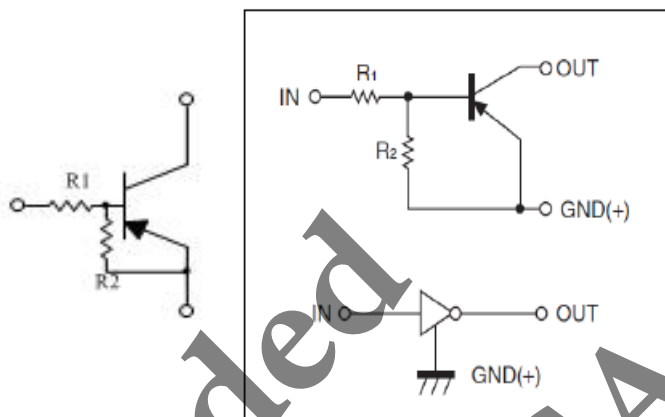


Features

- ◇ 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 (example)

| Part No. | Package | Packing | Packing code | Packing code (Green) | Marking | Manufacture code |
|-----------|---------|--------------|--------------|----------------------|---------|------------------|
| DTA143 EM | SOT-723 | 8K / 7" Reel | RM | RMG | 13 | M0 |

Note : Detail please see "Ordering Information(detail, example)" below.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

| Parameter | Symbol | Value | | | | Unit |
|--|----------------|--------------|-----|-----------|-----|------|
| | | EM | EE | EUA / ECA | ESA | |
| Power Dissipation | P_D | 100 | 150 | 200 | 300 | mW |
| Supply Voltage | V_{CC} | -50 | | | | V |
| Input Voltage | V_{IN} | -30 ~ +10 | | | | 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

Electrical Characteristics

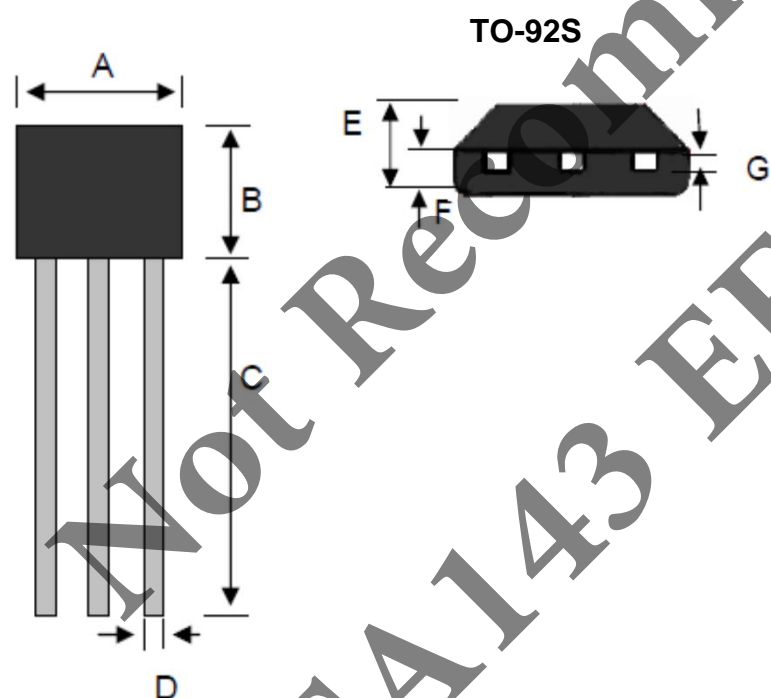
| Parameter | Symbol | Min | Typ | Max | Condition | Unit |
|----------------------|--------------|------|-----|------|--------------------------------------|------------|
| Input Voltage | $V_{I(off)}$ | -0.5 | | | $V_{CC} = -5V, I_O = -100\mu A$ | V |
| | $V_{I(on)}$ | | | -3 | $V_O = -0.3V, I_O = -20mA$ | |
| Output Voltage | $V_{O(on)}$ | | | -0.3 | $I_O / I_I = -10mA / -0.5mA$ | V |
| Input Current | I_I | | | -1.8 | $V_I = -5V$ | mA |
| Output Current | $I_{O(off)}$ | | | -0.5 | $V_{CC} = -50V, V_I = 0$ | μA |
| DC Current Gain | G_I | 30 | | | $V_O = -5V, I_O = -10mA$ | |
| Input Resistance | R_1 | 3.29 | 4.7 | 6.11 | | K Ω |
| Resistance Ratio | R_2/R_1 | 0.8 | 1 | 1.2 | | |
| Transition Frequency | f_T | | 250 | | $V_O = -10V, I_O = -5mA, f = 100MHz$ | MHz |

Ordering information

| Part No. | Package | Packing | Packing code | Packing code (Green) | Marking | Manufacture code (Note) |
|------------|---------|----------------|--------------|----------------------|---------|-------------------------|
| DTA143 EM | SOT-723 | 8K / 7" Reel | RM | RMG | 13 | |
| DTA143 EE | SOT-523 | 3K / 7" Reel | RN | RNG | 13 | |
| DTA143 EUA | SOT-323 | 3K / 7" Reel | RV | RVG | 13 | |
| DTA143 ECA | SOT-23 | 3K / 7" Reel | RU | RUG | 13 | |
| DTA143 ESA | TO-92S | 3K / Box(Ammo) | A3 | A3G | | |
| DTA143 EM | SOT-723 | 8K / 7" Reel | RM | RMG | 13 | M0 |
| DTA143 EE | SOT-523 | 3K / 7" Reel | RN | RNG | 13 | M0 |
| DTA143 EUA | SOT-323 | 3K / 7" Reel | RV | RVG | 13 | M0 |
| DTA143 ECA | SOT-23 | 3K / 7" Reel | RU | RUG | 13 | M0 |
| DTA143 ESA | TO-92S | 3K / Box(Ammo) | A3 | A3G | | M0 |

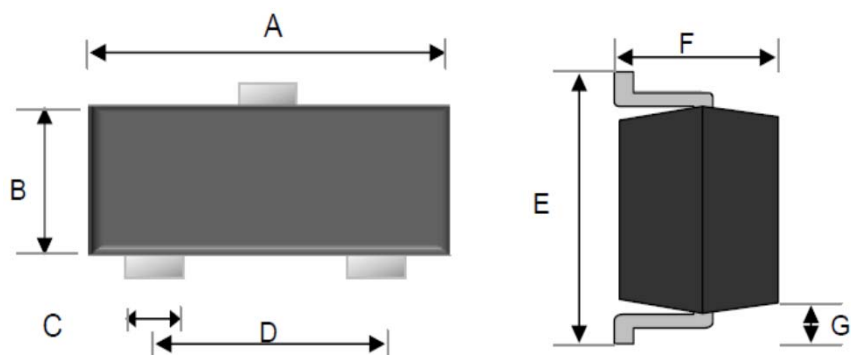
Note : Manufacture special control, if empty means no special control requirement.

Dimensions



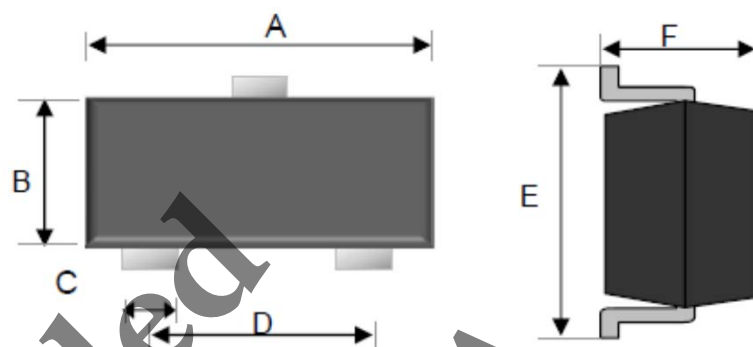
| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|-------|------------|------|
| | Min | Max | Min | Max |
| A | 3.85 | 4.15 | 0.15 | 0.16 |
| B | 3.01 | 3.31 | 0.12 | 0.13 |
| C | 15.10 | 15.50 | 0.59 | 0.61 |
| D | 0.38 | 0.55 | 0.01 | 0.02 |
| E | 1.42 | 1.62 | 0.06 | 0.06 |
| D | 0.66 | 0.86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

SOT-23



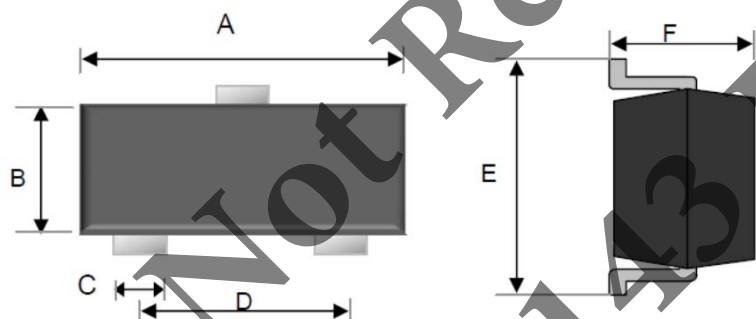
| DIM. | Unit(mm) | | Unit(inch) | |
|------|-----------|------|------------|------|
| | Min | Max | Min | Max |
| A | 2.80 | 3.00 | 0.11 | 0.12 |
| B | 1.20 | 1.40 | 0.05 | 0.06 |
| C | 0.30 | 0.50 | 0.01 | 0.02 |
| D | 1.80 | 2.00 | 0.07 | 0.08 |
| E | 2.25 | 2.55 | 0.09 | 0.10 |
| F | 0.90 | 1.20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

SOT-323



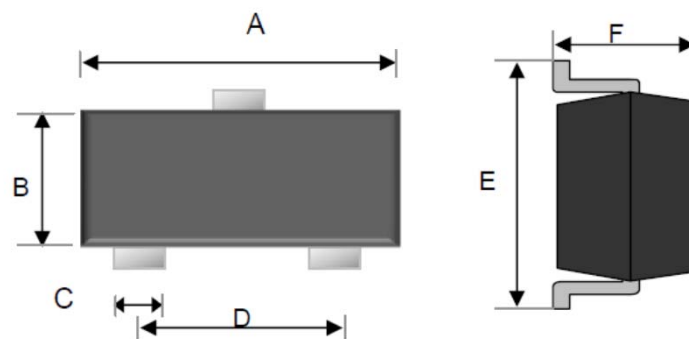
| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|------|------------|------|
| | Min | Max | Min | Max |
| A | 1.90 | 2.10 | 0.07 | 0.08 |
| B | 1.15 | 1.35 | 0.05 | 0.05 |
| C | 0.25 | 0.35 | 0.01 | 0.01 |
| D | 1.20 | 1.40 | 0.05 | 0.06 |
| E | 2.00 | 2.20 | 0.08 | 0.09 |
| F | 0.80 | 1.00 |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

SOT-523



| DIM. | 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



| DIM. | 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 |

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