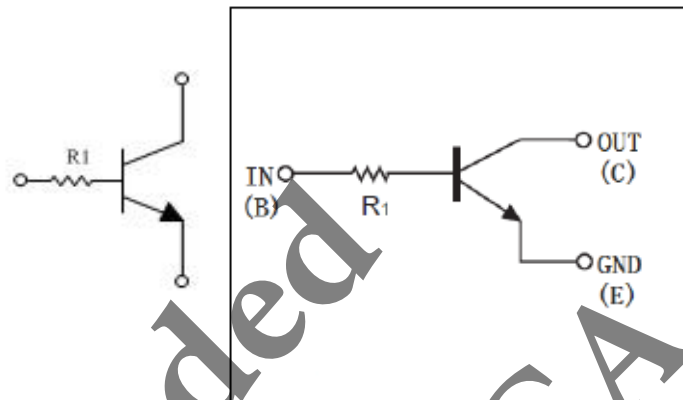


Features

- ◇ 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 |
|-----------|---------|--------------|--------------|----------------------|---------|------------------|
| DTC143 TM | SOT-723 | 8K / 7" Reel | RM | RMG | 03 | 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 |
|--|----------------|--------------|-----|-----------|-----|------|
| | | TM | TE | TUA / TCA | TSA | |
| Power Dissipation | PD | 100 | 150 | 200 | 300 | mW |
| Collector-Base Voltage | $V_{BR(CBO)}$ | 50 | | | | V |
| Collector-Emitter Voltage | $V_{BR(CEO)}$ | 50 | | | | V |
| Emitter-Base Voltage | $V_{BR(EBO)}$ | 5 | | | | V |
| 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

Electrical Characteristics

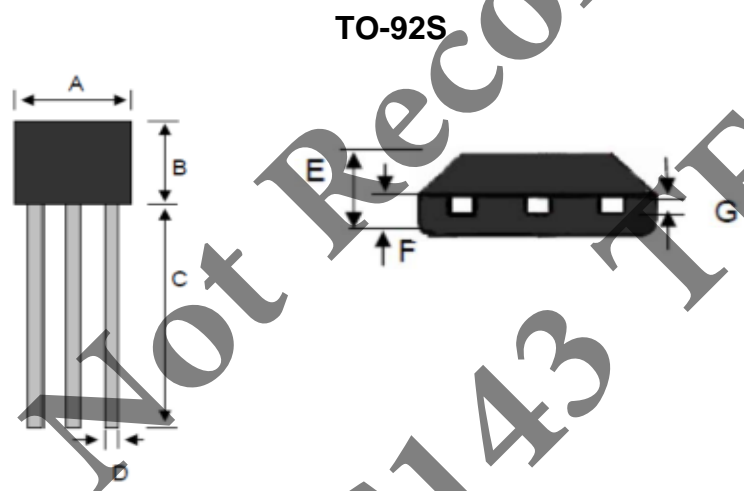
| Parameter | Symbol | Min | Typ | Max | Condition | Unit |
|-------------------------------------|---------------|------|-----|------|---------------------------------|------------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 50 | | | $I_C=50\mu A$ | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 50 | | | $I_C=1mA$ | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | | $I_E=50\mu A$ | V |
| Collector Cut-Off Current | I_{CBO} | | | 0.5 | $V_{CB}=50V$ | μA |
| Emitter Cut-Off Current | I_{EBO} | | | 0.5 | $V_{EB}=4V$ | μA |
| DC Current Gain | $V_{CE(sat)}$ | | | 0.3 | $I_C=5mA, I_B=0.25mA$ | V |
| Input Resistance | h_{FE} | 100 | | 600 | $V_{CE}=5V, I_C=1mA$ | |
| Resistance Ratio | R_1 | 3.29 | 4.7 | 6.11 | | K Ω |
| Transition Frequency | f_T | | 250 | | $V_{CE}=10V, I_E=5mA, f=100MHz$ | MHz |

Ordering information (Detail, example)

| Part No. | Package | Packing | Packing code | Packing code (Green) | Marking | Manufacture code (Note) |
|------------|---------|----------------|--------------|----------------------|---------|-------------------------|
| DTC143 TM | SOT-723 | 8K / 7" Reel | RM | RMG | 03 | |
| DTC143 TE | SOT-523 | 3K / 7" Reel | RN | RNG | 03 | |
| DTC143 TUA | SOT-323 | 3K / 7" Reel | RV | RVG | 03 | |
| DTC143 TCA | SOT-23 | 3K / 7" Reel | RU | RUG | 03 | |
| DTC143 TSA | TO-92S | 3K / Box(Ammo) | A3 | A3G | | |
| DTC143 TM | SOT-723 | 8K / 7" Reel | RM | RMG | 03 | M0 |
| DTC143 TE | SOT-523 | 3K / 7" Reel | RN | RNG | 03 | M0 |
| DTC143 TUA | SOT-323 | 3K / 7" Reel | RV | RVG | 03 | M0 |
| DTC143 TCA | SOT-23 | 3K / 7" Reel | RU | RUG | 03 | M0 |
| DTC143 TSA | TO-92S | 3K / Box(Ammo) | A3 | A3G | | M0 |

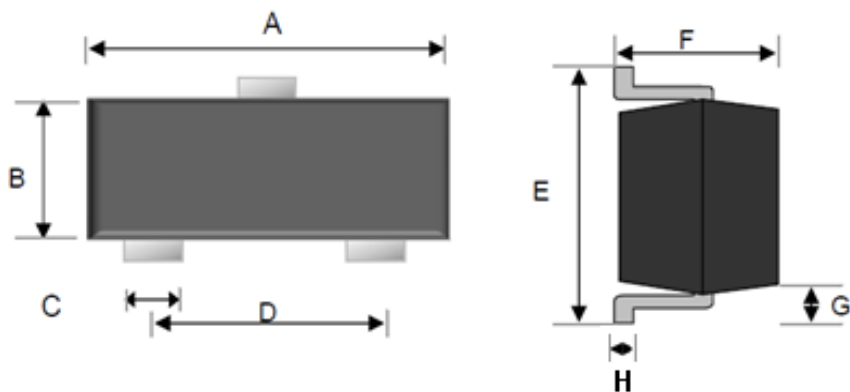
Note : Manufacture special control, if empty means no special control requirement.

Dimensions



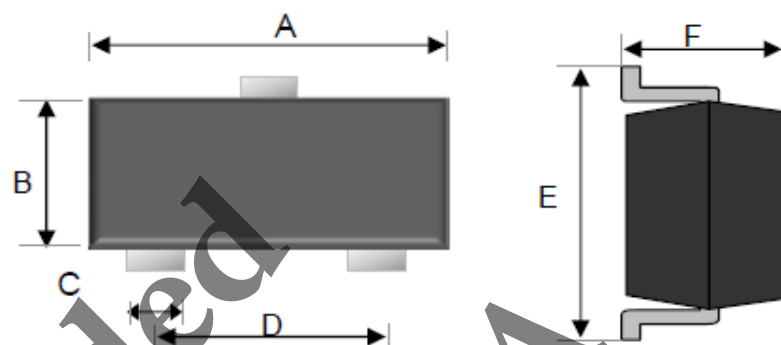
| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|-------|------------|------|
| | Min | Max | Min | Max |
| A | 3.90 | 4.10 | 0.15 | 0.16 |
| B | 3.05 | 3.25 | 0.12 | 0.13 |
| C | 15.10 | 15.50 | 0.59 | 0.61 |
| D | 0.35 | 0.48 | 0.01 | 0.02 |
| E | 1.42 | 1.62 | 0.06 | 0.06 |
| F | 0.66 | 0.86 | 0.03 | 0.03 |
| G | 0.36 | 0.51 | 0.01 | 0.02 |

SOT-23



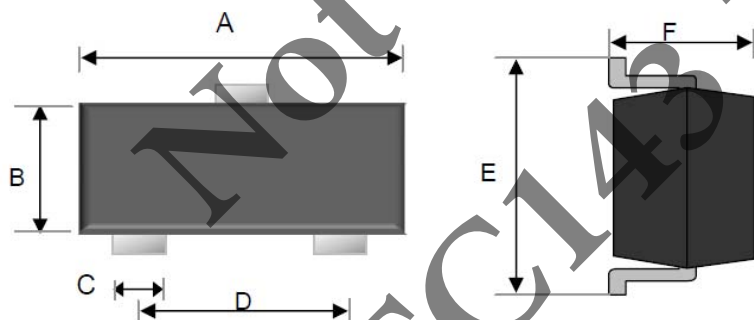
| DIM. | Unit(mm) | | Unit(inch) | |
|------|-----------|------|------------|-------|
| | Min | Max | Min | Max |
| A | 2.70 | 3.10 | 0.106 | 0.122 |
| B | 1.10 | 1.50 | 0.043 | 0.059 |
| C | 0.30 | 0.51 | 0.012 | 0.020 |
| D | 1.78 | 2.04 | 0.070 | 0.080 |
| E | 2.20 | 2.60 | 0.087 | 0.102 |
| F | 0.90 | 1.30 | 0.035 | 0.051 |
| G | 0.550 REF | | 0.022 REF | |
| H | 0.1 REF | | 0.004 REF | |

SOT-323



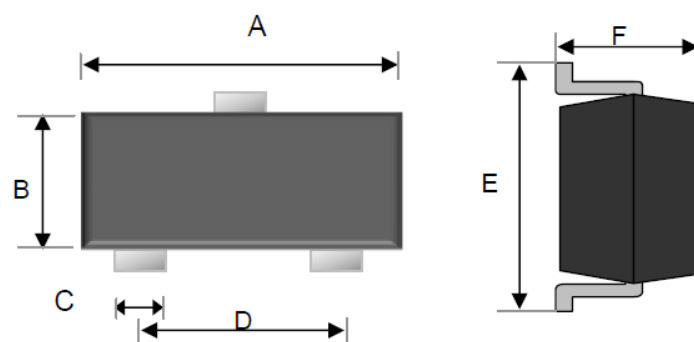
| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|------|------------|------|
| | Min | Max | Min | Max |
| A | 1.80 | 2.20 | 0.07 | 0.09 |
| B | 1.15 | 1.35 | 0.05 | 0.05 |
| C | 0.15 | 0.40 | 0.01 | 0.02 |
| D | 1.20 | 1.40 | 0.05 | 0.06 |
| E | 2.00 | 2.45 | 0.08 | 0.10 |
| F | 0.80 | 1.10 | 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 | 0.90 | 0.03 | 0.04 |
| C | 0.15 | 0.35 | 0.01 | 0.01 |
| D | 0.90 | 1.10 | 0.04 | 0.04 |
| E | 1.45 | 1.75 | 0.06 | 0.07 |
| F | 0.62 | 0.95 | 0.02 | 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 | 0.80 TYP. | | 0.031 TYP. | |
| E | 1.15 | 1.25 | 0.05 | 0.05 |
| F | 0.43 | 0.50 | 0.02 | 0.02 |

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