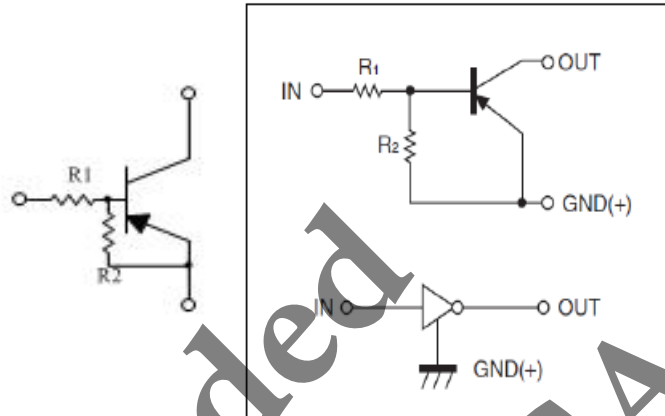


## Features

- ◇ 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

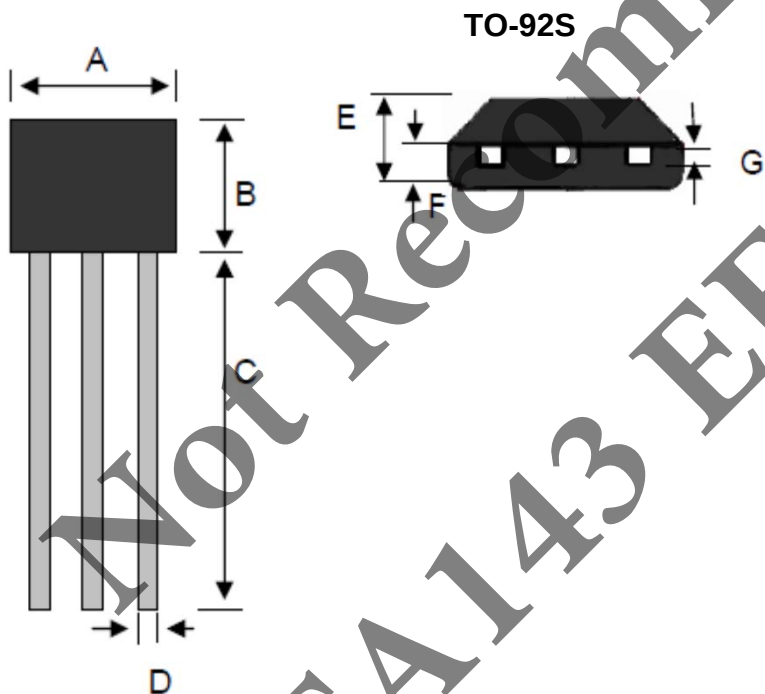
| Parameter            | Symbol       | Min  | Typ | Max  | Condition                            | Unit       |
|----------------------|--------------|------|-----|------|--------------------------------------|------------|
| Input Voltage        | $V_{I(off)}$ | -0.5 |     |      | $V_{CC} = -5V, I_O = -100\mu A$      | 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 | $V_{CC} = -50V, V_I = 0$             | $\mu A$    |
| DC Current Gain      | $G_I$        | 30   |     |      | $V_O = -5V, I_O = -10mA$             |            |
| Input Resistance     | $R_1$        | 3.29 | 4.7 | 6.11 |                                      | K $\Omega$ |
| 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                      |

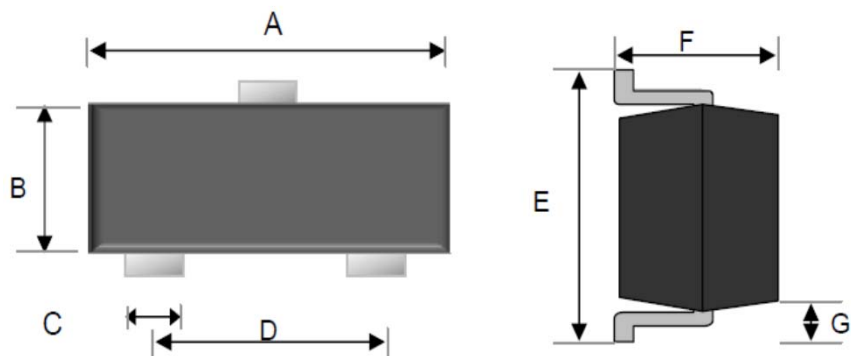
Note : Manufacture special control, if empty means no special control requirement.

### Dimensions



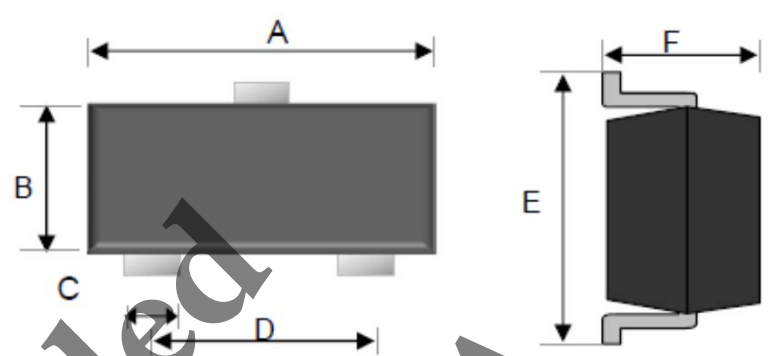
| DIM. | Unit(mm) |       | Unit(inch) |      |
|------|----------|-------|------------|------|
|      | Min      | Max   | Min        | Max  |
| A    | 3.85     | 4.15  | 0.15       | 0.16 |
| B    | 3.01     | 3.31  | 0.12       | 0.13 |
| C    | 15.10    | 15.50 | 0.59       | 0.61 |
| D    | 0.38     | 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**



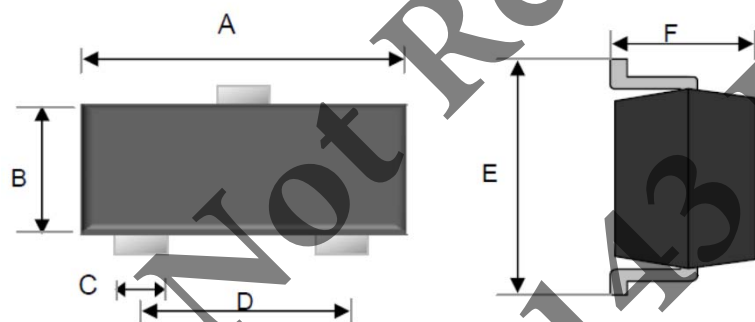
| DIM. | Unit(mm)  |      | Unit(inch) |      |
|------|-----------|------|------------|------|
|      | Min       | Max  | Min        | Max  |
| A    | 2.80      | 3.00 | 0.11       | 0.12 |
| B    | 1.20      | 1.40 | 0.05       | 0.06 |
| C    | 0.30      | 0.50 | 0.01       | 0.02 |
| D    | 1.80      | 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**



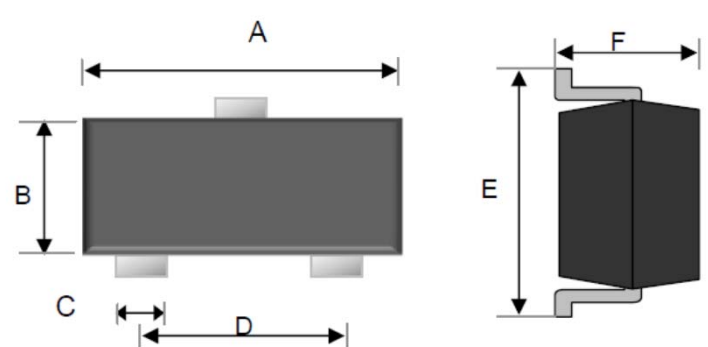
| DIM. | Unit(mm) |      | Unit(inch) |      |
|------|----------|------|------------|------|
|      | Min      | Max  | Min        | Max  |
| A    | 1.90     | 2.10 | 0.07       | 0.08 |
| B    | 1.15     | 1.35 | 0.05       | 0.05 |
| C    | 0.25     | 0.35 | 0.01       | 0.01 |
| D    | 1.20     | 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 |