



# DTC115T

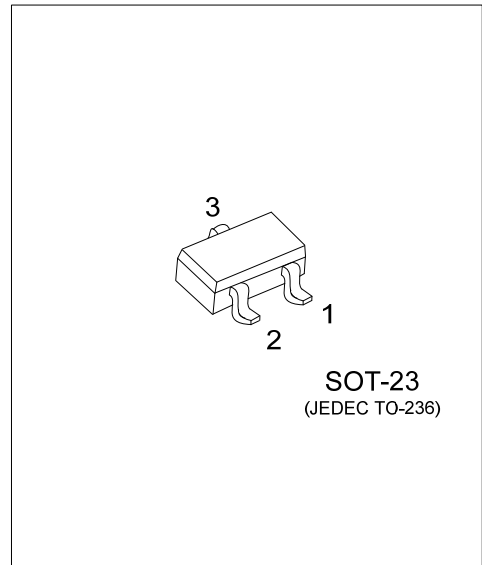
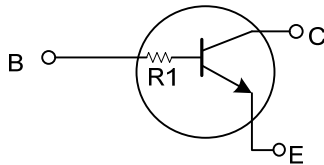
## NPN SILICON TRANSISTOR

### NPN DIGITAL TRANSISTOR (BUILT-IN BIAS RESISTORS)

#### FEATURES

- \* Built-in bias resistors that implies easy ON/OFF applications.
- \* The bias resistors are thin-film resistors with complete isolation to allow negative input.

#### EQUIVALENT CIRCUIT



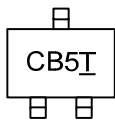
#### ORDERING INFORMATION

| Order Number   | Package | Pin Assignment |   |   | Packing   |
|----------------|---------|----------------|---|---|-----------|
|                |         | 1              | 2 | 3 |           |
| DTC115TG-AE3-R | SOT-23  | E              | B | C | Tape Reel |

Note: Pin Assignment: E: Emitter B: Base C: Collector

|   |   |
|---|---|
| <p>DTC115TG-AE3-R</p> <p>(1)Packing Type<br/>(2)Package Type<br/>(3)Green Package</p> | <p>(1) R: Tape Reel<br/>(2) AE3: SOT-23<br/>(3) G: Halogen Free and Lead Free</p> |
|---|---|

#### MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless others specified)

| PARAMETER                   | SYMBOL    | RATINGS    | UNIT             |
|-----------------------------|-----------|------------|------------------|
| Collector-base voltage      | $V_{CBO}$ | 50         | V                |
| Collector-emitter voltage   | $V_{CEO}$ | 50         | V                |
| Emitter-base voltage        | $V_{EBO}$ | 5          | V                |
| Collector current           | $I_C$     | 100        | mA               |
| Collector Power dissipation | $P_C$     | 200        | mW               |
| Junction temperature        | $T_J$     | 150        | $^\circ\text{C}$ |
| Storage temperature         | $T_{STG}$ | -55 ~ +150 | $^\circ\text{C}$ |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS ( $T_A=25^\circ\text{C}$ , unless others specified)

| PARAMETER                            | SYMBOL        | TEST CONDITIONS                                       | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | $I_C=50\mu\text{A}$                                   | 50  |     |     | V             |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C=1\text{mA}$                                      | 50  |     |     | V             |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$    | $I_E=50\mu\text{A}$                                   | 5   |     |     | V             |
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB}=50\text{V}$                                   |     |     | 0.5 | $\mu\text{A}$ |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{EB}=4\text{V}$                                    |     |     | 0.5 | $\mu\text{A}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=1\text{mA}, I_B=0.1\text{mA}$                    |     |     | 0.3 | V             |
| DC Current transfer Ratio            | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=1\text{mA}$                    | 100 | 250 | 600 |               |
| Input Resistance                     | R1            |   | 70  | 100 | 130 | K $\Omega$    |
| Transition Frequency                 | $f_T$         | $V_{CE}=10\text{V}, I_E=-5\text{mA}, f=100\text{MHz}$ |     | 250 |     | MHz           |

Note: Transition frequency of the device

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