



DTC143T

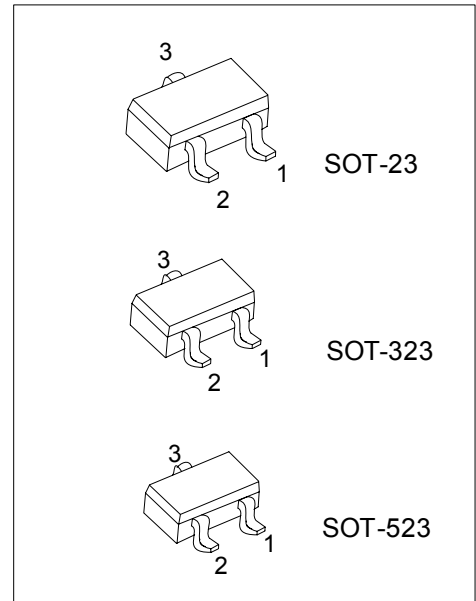
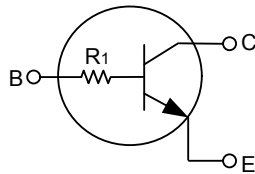
NPN SILICON TRANSISTOR

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



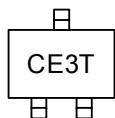
* Pb-free plating product number: DTC143TL

ORDERING INFORMATION

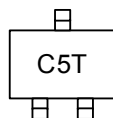
| Order Number | | Package | Pin Assignment | | | Packing |
|---------------|-------------------|---------|----------------|---|---|-----------|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| DTC143T-AE3-R | DTC143TL-AE3-R | SOT-23 | E | B | C | Tape Reel |
| DTC143T-AL3-R | DTC143TL-AL3-R | SOT-323 | E | B | C | Tape Reel |
| DTC143T-AN3-R | DTC143TL-AN3-R | SOT-523 | E | B | C | Tape Reel |

| | |
|---|--|
| <p>DTC143TL-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p> | <p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p> |
|---|--|

MARKING



For SOT-23/SOT-323 Package



For SOT-523 Package

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C , unless otherwise 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 | SOT-523 | P_C | 150 | mW |
| | SOT-23/SOT-323 | | 200 | mW |
| Junction Temperature | | T_J | +150 | |
| Storage Temperature | | T_{STG} | -55~+150 | |

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

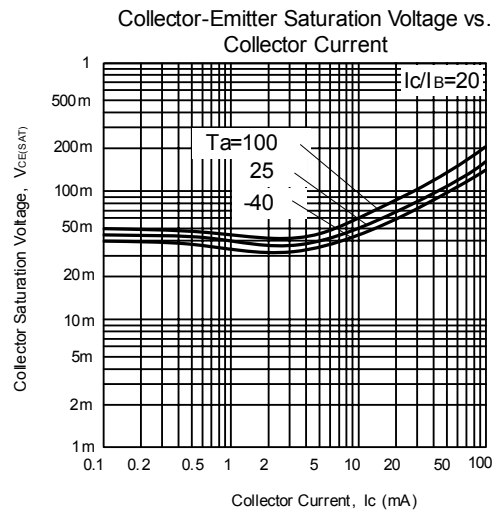
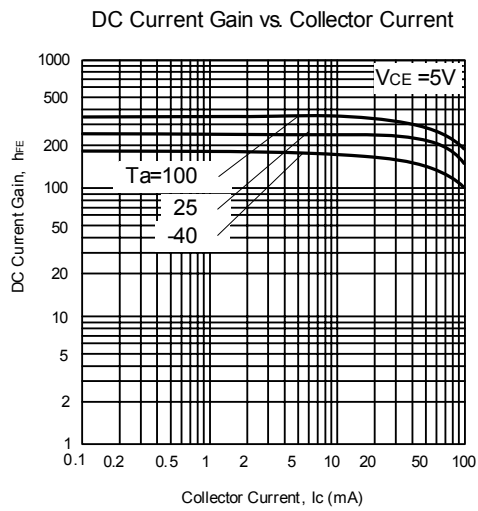
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|------|-----|------|------------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 50\mu A$ | 50 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1mA$ | 50 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 50\mu A$ | 5 | | | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 50V$ | | | 0.5 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 4V$ | | | 0.5 | μA |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = 5mA, I_B = 0.25mA$ | | | 0.3 | V |
| DC Current Gain | h_{FE} | $V_{CE} = 5V, I_C = 1mA$ | 100 | 250 | 600 | |
| Input Resistance | R_i | | 3.29 | 4.7 | 6.11 | k Ω |
| Transition Frequency | f_T | $V_{CE} = 10V, I_E = 5mA, f = 100MHz$ * | | 250 | | MHz |

* Transition frequency of the device.

■ TYPICAL CHARACTERISTICS



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