

## DTB123Y

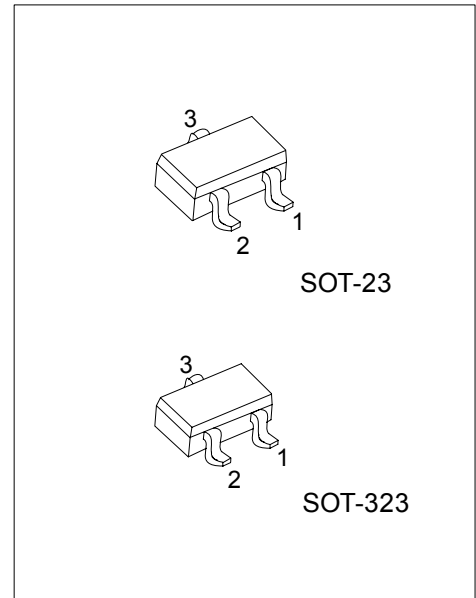
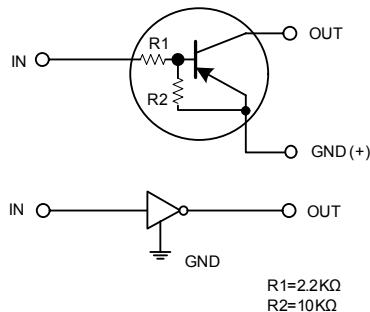
## PNP SILICON TRANSISTOR

## DIGITAL TRANSISTORS (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 positive input.

## ■ EQUIVALENT CIRCUIT



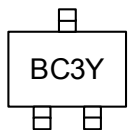
\*Pb-free plating product number:DTB123YL

## ■ ORDERING INFORMATION

| Order Number  |                   | Package | Pin Assignment |   |   | Packing   |
|---------------|-------------------|---------|----------------|---|---|-----------|
| Normal        | Lead Free Plating |         | 1              | 2 | 3 |           |
| DTB123Y-AE3-R | DTB123YL-AE3-R    | SOT-23  | G              | I | O | Tape Reel |
| DTB123Y-AL3-R | DTB123YL-AL3-R    | SOT-323 | G              | I | O | Tape Reel |

|                                                                                               |                                                                                                            |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p>DTB123YL-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</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p> |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER            | SYMBOL    | RATINGS    | UNIT |
|----------------------|-----------|------------|------|
| Supply Voltage       | $V_{CC}$  | -50        | V    |
| Input Voltage        | $V_{IN}$  | -12 ~ +5   | V    |
| Output Current       | $I_C$     | -500       | mA   |
| Power Dissipation    | $P_D$     | 200        | mW   |
| Junction Temperature | $T_J$     | +150       | °C   |
| Storage Temperature  | $T_{STG}$ | -55 ~ +150 | °C   |

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

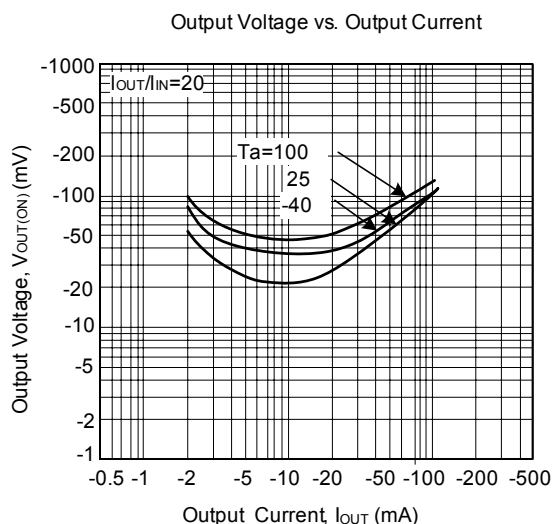
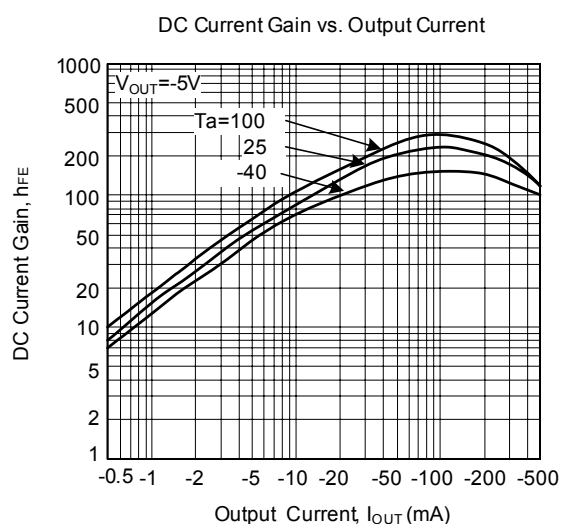
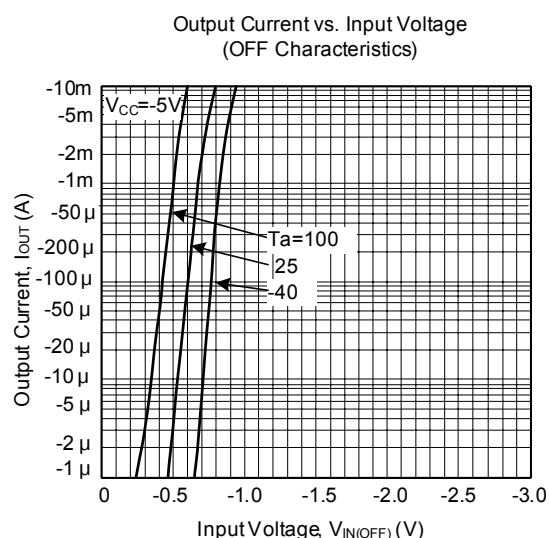
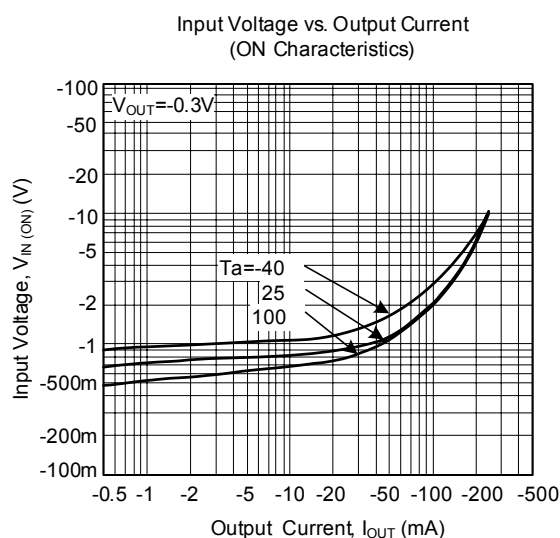
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS (Ta=25°C, unless others specified)

| PARAMETER                   | SYMBOL         | TEST CONDITIONS                         | MIN  | TYP  | MAX  | UNIT       |
|-----------------------------|----------------|-----------------------------------------|------|------|------|------------|
| Input Voltage               | $V_{IN(OFF)}$  | $V_{CC} = -5V, I_{OUT} = -100\mu A$     |      |      | -0.3 | V          |
|                             | $V_{IN(ON)}$   | $V_{OUT} = -0.3V, I_{OUT} = -20mA$      | -2   |      |      |            |
| Output Voltage              | $V_{OUT(ON)}$  | $I_{OUT}/I_{IN} = -50mA/-2.5mA$         |      | -0.1 | -0.3 | V          |
| Input Current               | $I_{IN}$       | $V_{IN} = -5V$                          |      |      | -3.0 | mA         |
| Output Current              | $I_{OUT(OFF)}$ | $V_{CC} = -50V, V_{IN} = 0V$            |      |      | -0.5 | $\mu A$    |
| DC Current Gain             | $h_{FE}$       | $V_{OUT} = -5V, I_{OUT} = -50mA$        | 56   |      |      |            |
| Input Resistance            | $R_1$          |                                         | 1.54 | 2.2  | 2.86 | K $\Omega$ |
| Resistor Ratio              | $R_2/R_1$      |                                         | 3.6  | 4.5  | 5.5  |            |
| Transition Frequency (Note) | $f_T$          | $V_{CE} = -10V, I_E = 50mA, f = 100MHz$ |      | 200  |      | MHz        |

Note: Transition frequency of the device

## TYPICAL CHARACTERISTICS



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