



## DTB114E

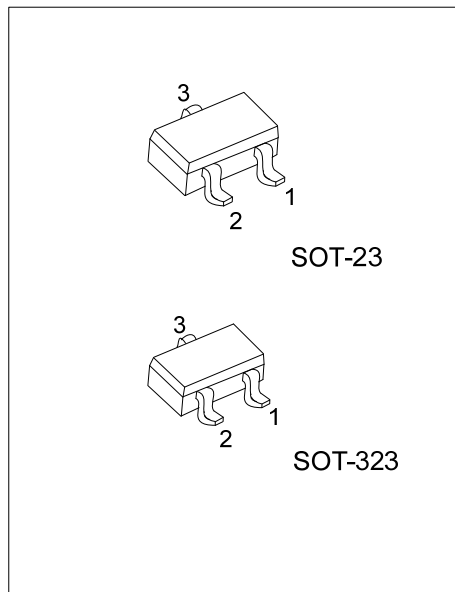
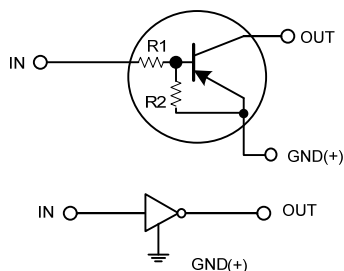
## PNP SILICON TRANSISTOR

### 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

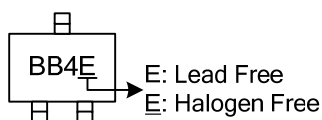


#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTB114EL-AE3-R	DTB114EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTB114EL-AL3-R	DTB114EG-AL3-R	SOT-323	G	I	O	Tape Reel

<p>DTB114EL-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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#### ■ MARKING



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

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	-50	V
Input Voltage	$V_{IN}$	-40~+10	V
Output Current	$I_{OUT}$	-500	mA
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

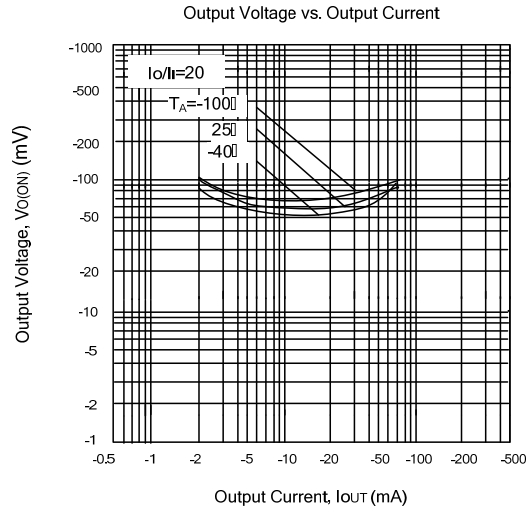
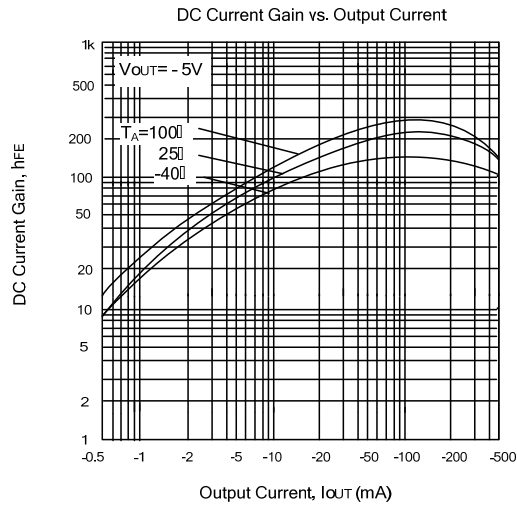
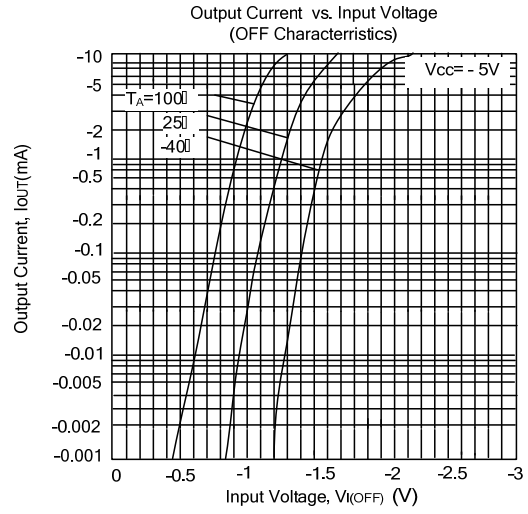
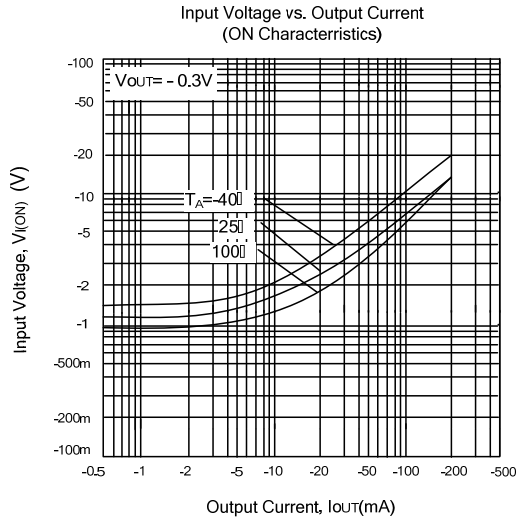
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.  
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = -5V, I_{OUT} = -100\mu\text{A}$			-0.5	V
	$V_{IN(ON)}$	$V_{OUT} = -0.3V, I_{OUT} = -10\text{mA}$	-3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN} = -50\text{mA}/-2.5\text{mA}$		-0.1	-0.3	V
Input Current	$I_{IN}$	$V_{IN} = -5V$			-0.88	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = -50V, V_{IN} = 0V$			-0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT} = -5V, I_{OUT} = -50\text{mA}$	56			
Input Resistance	$R_1$		7	10	13	k $\Omega$
Resistance Ratio	$R_2/R_1$		0.8	1	1.2	
Transition Frequency	$f_T$	$V_{CE} = -10\text{V}, I_E = 5\text{mA}, f = 100\text{MHz}(\text{Note})$		200		MHz

Note: Transition frequency of the device

## TYPICAL CHARACTERISTICS



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