



DTB123E

Preliminary

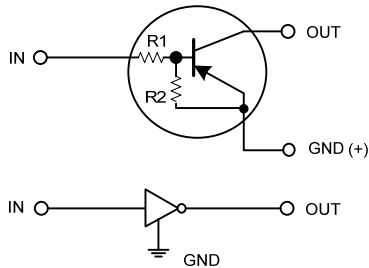
PNP SILICON TRANSISTOR

**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**



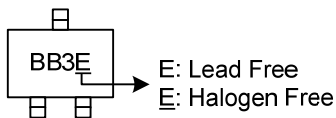
■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTB123EL-AE3-R	DTB123EG-AE3-R	SOT-23	I	G	O	Tape Reel

Note: Pin assignment: I: IN G: GND O: OUT

<p>DTB123EG-AE3-R</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ **MARKING**



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-12	V
		10	V
Output Current	I_C	-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 SPECIFICATIONS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=-5\text{V}, I_{OUT}=-100\mu\text{A}$			-0.5	V
	$V_{IN(ON)}$	$V_{OUT}=-0.3\text{V}, I_O=-20\text{mA}$	-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}	$V_{IN}=-5\text{V}$			-3.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=-50\text{V}, V_{IN}=0\text{V}$			-0.5	μA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	$V_{OUT}=-5\text{V}, I_{OUT}=-50\text{mA}$	39			
SMALL SIGNAL CHARACTERISTICS						
Input Resistance	R_1		1.54	2.2	2.86	k Ω
Resistor Ratio	R_2/R_1		0.8	1	1.2	
Transition Frequency (Note)	f_T	$V_{CE}=-10\text{V}, I_E=50\text{mA}, f=100\text{MHz}$		200		MHz

Note: Transition frequency of the device.

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