



## DTB113EC

Preliminary

PNP SILICON TRANSISTOR

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

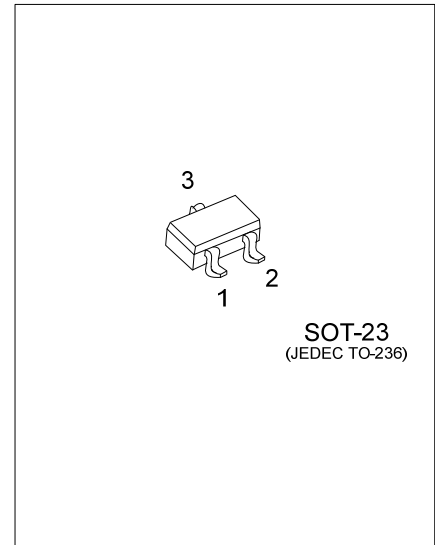
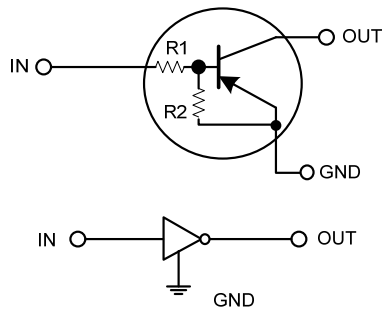
#### DESCRIPTION

The UTC **DTB113EC** is a PNP epitaxial transistor; it uses UTC's advanced technology to provide the customers with low collector-emitter saturation voltage, etc.

#### 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.

#### SYMBOL



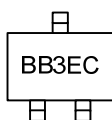
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTB113ECL-AE3-R	DTB113ECG-AE3-R	SOT-23	G	I	O	Tape Reel

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

DTB113ECG-AE3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE3: SOT-23
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

#### MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	-50	V
Input Voltage	$V_{IN}$	-10 ~ +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 SPECIFICATIONS ( $T_A=25^\circ\text{C}$ , unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=-5V, I_{OUT}=-100\mu\text{A}$			-0.5	V
	$V_{I(ON)}$	$V_{OUT}=-0.3V, I_{OUT}=-20\text{mA}$	-3.0			
Output Voltage	$V_{O(ON)}$	$I_{OUT} / I_{IN}=-50\text{mA}/-2.5\text{mA}$			-0.3	V
Input Current	$I_i$	$V_{IN}=-5V$			-7.2	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=-50V, V_{IN}=0V$			-0.5	$\mu\text{A}$
DC Current Gain	$G_i$	$V_{OUT}=-5V, I_{OUT}=-50\text{mA}$	33			
Input Resistance	$R_1$		0.7	1.0	1.3	k $\Omega$
Resistance Ratio	$R_2 / R_1$		0.8	1.0	1.2	
Transition Frequency	$f_T$	$V_{CE}=-10V, I_E=50\text{mA}, f=100\text{MHz}$ (Note)		200		MHz

Note: Transition frequency of the device.

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