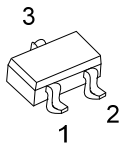
DTD113EC **Preliminary** ***NPN SILICON TRANSISTOR***

NPN DIGITAL TRANSISTOR (BUILT- IN BIAS RESISTORS)



SOT-23
(JEDEC TO-236)

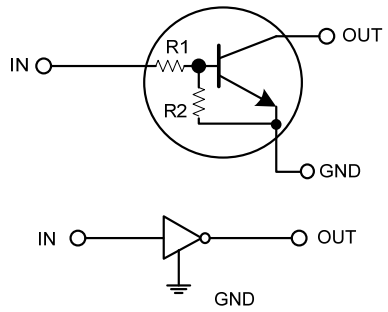
■ DESCRIPTION

The UTC **DTD113EC** is an NPN 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

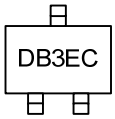
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTD113ECL-AE3-R	DTD113ECG-AE3-R	SOT-23	G	I	O	Tape Reel

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

DTD113ECG-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°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	°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 (T_A=25°C, unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	V_{CC}=5V, I_{OUT}=100μA			0.5	V
	$V_{I(ON)}$	V_{OUT}=0.3V, I_{OUT}=20mA	3.0			
Output Voltage	$V_{O(ON)}$	I_{OUT} / I_{IN}=50mA/2.5mA			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	μA
DC Current Gain	h_{FE}	V_{OUT}=5V, I_{OUT}=50mA	33			
Input Resistance	R1		0.7	1.0	1.3	kΩ
Resistance Ratio	R2 / R1		0.8	1.0	1.2	
Transition Frequency	f_T	V_{CE}=10V, I_E=-50mA, f=100MHz (Note)		200		MHz

Note: Transition frequency of the device.