



# DTC114E

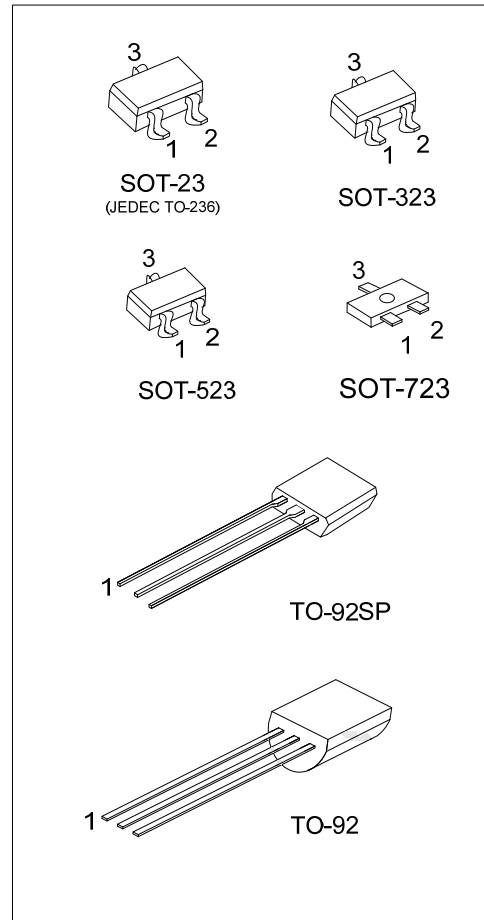
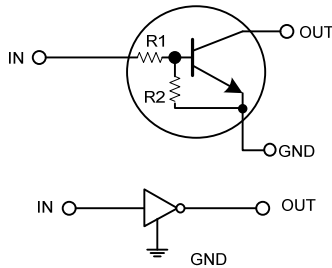
## NPN SILICON TRANSISTOR

### NPN DIGITAL TRANSISTOR (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 negative input.

■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC114EL-AE3-R	DTC114EG-AE3-R	SOT-23	I	G	O	Tape Reel
DTC114EL-AL3-R	DTC114EG-AL3-R	SOT-323	I	G	O	Tape Reel
DTC114EL-AN3-R	DTC114EG-AN3-R	SOT-523	I	G	O	Tape Reel
DTC114EL-AQ3-R	DTC114EG-AQ3-R	SOT-723	I	G	O	Tape Reel
DTC114EL-T92-B	DTC114EG-T92-B	TO-92	G	O	I	Tape Box
DTC114EL-T92-K	DTC114EG-T92-K	TO-92	G	O	I	Bulk
DTC114EL-T9S-B	DTC114EG-T9S-B	TO-92SP	G	O	I	Tape Box
DTC114EL-T9S-K	DTC114EG-T9S-K	TO-92SP	G	O	I	Bulk

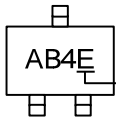
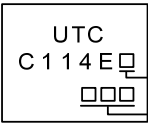
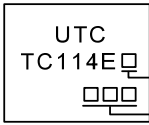
Note: Pin Assignment: I: IN    G: GND    O: OUT

<p>DTC114EG-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 AQ3: SOT-723, T92: TO-92, T9S: TO-92SP</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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# DTC114E

## NPN SILICON TRANSISTOR

### MARKING

SOT-23 / SOT-323 SOT-523 / SOT-723	TO-92	TO-92SP
 <p>AB4E</p> <p>E: Lead Free E: Halogen Free</p>	 <p>UTC C 1 1 4 E</p> <p>L: Lead Free G: Halogen Free Date Code</p>	 <p>UTC TC 114E</p> <p>L: Lead Free G: Halogen Free Date Code</p>

■ 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 ~ +40	V
Output Current		$I_{OUT}$	100	mA
Power Dissipation	SOT-23/SOT-323	$P_D$	200	mW
	SOT-523		150	
	SOT-723		100	
	TO-92		625	
	TO-92SP		550	
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

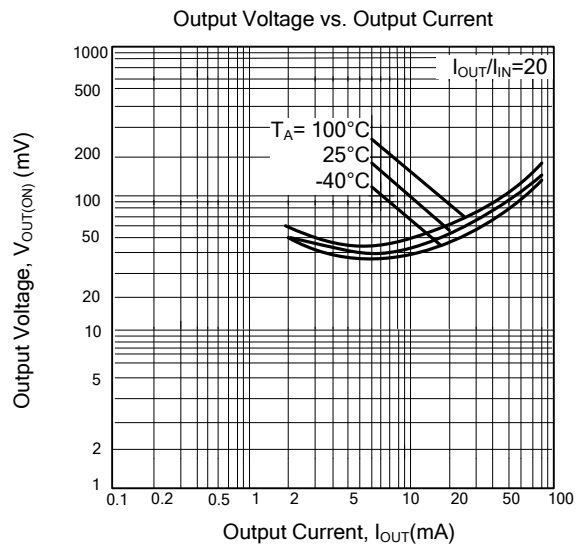
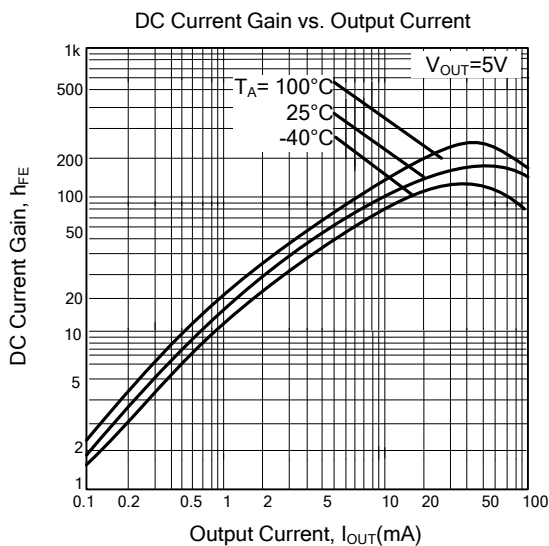
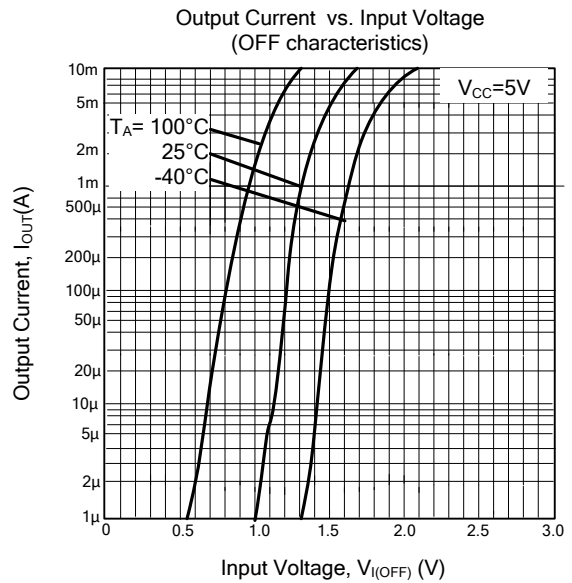
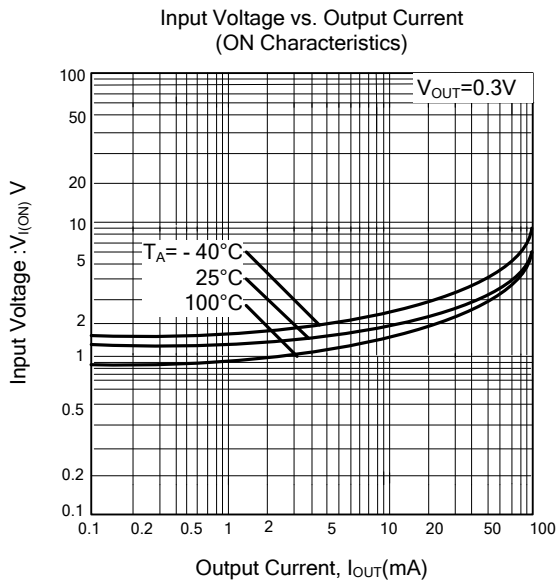
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC}=5\text{V}$ , $I_{OUT}=100\mu\text{A}$			0.5	V
	$V_{IN(ON)}$	$V_{OUT}=0.3\text{V}$ , $I_{OUT}=10\text{mA}$	3			V
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN}=10\text{mA}/0.5\text{mA}$		0.1	0.3	V
Input Current	$I_{IN}$	$V_{IN}=5\text{V}$			0.88	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC}=50\text{V}$ , $V_{IN}=0\text{V}$			0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{OUT}=5\text{V}$ , $I_{OUT}=5\text{mA}$	30			
Input Resistance	$R_1$		7	10	13	K $\Omega$
Resistor Ratio	$R_2/R_1$		0.8	1	1.2	
Transition Frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_E=-5\text{mA}$ , $f=100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device.

## TYPICAL CHARACTERISTICS



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