



## DTC114E

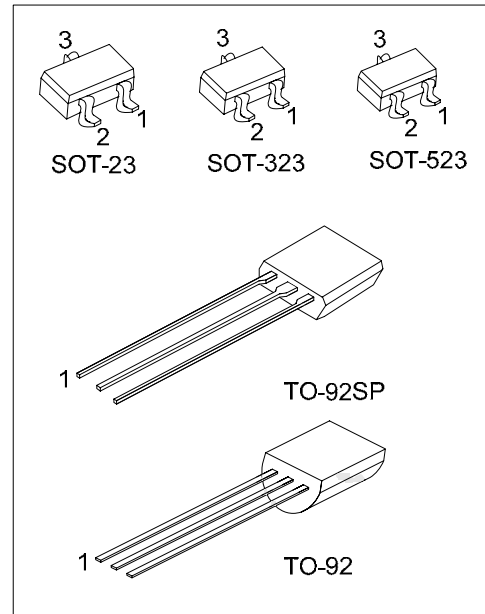
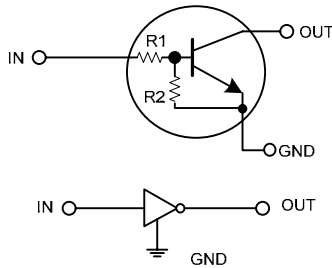
### NPN SILICON TRANSISTOR

## 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



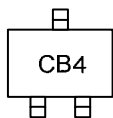
\*Pb-free plating product number:DTC114EL

### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTC114E-AE3-R	DTC114EL-AE3-R	SOT-23	G	I	O	Tape Reel
DTC114E-AL3-R	DTC114EL-AL3-R	SOT-323	G	I	O	Tape Reel
DTC114E-AN3-R	DTC114EL-AN3-R	SOT-523	G	I	O	Tape Reel
DTC114E-T92-B	DTC114EL-T92-B	TO-92	G	O	I	Tape Box
DTC114E-T92-K	DTC114EL-T92-K	TO-92	G	O	I	Bulk
DTC114E-T92-R	DTC114EL-T92-R	TO-92	G	O	I	Tape Reel
DTC114E-T9S-K	DTC114EL-T9S-K	TO-92SP	G	O	I	Bulk

<p>DTC114EL-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523, T92: TO-92, T9S: TO-92SP (3) L: Lead Free Plating, Blank: Pb/Sn</p>
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### MARKING



For SOT-23/SOT-323/SOT-523 Package

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		$V_{CC}$	50	V
Input Voltage		$V_{IN}$	-10 ~ +40	V
Output Current		$I_{OUT}$	50	mA
Power Dissipation	SOT-23/SOT-323	$P_D$	200	mW
	SOT-523		150	mW
	TO-92/TO-92SP		300	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.

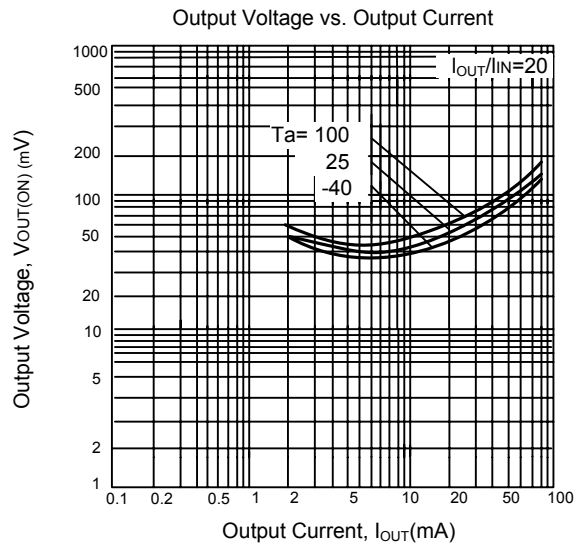
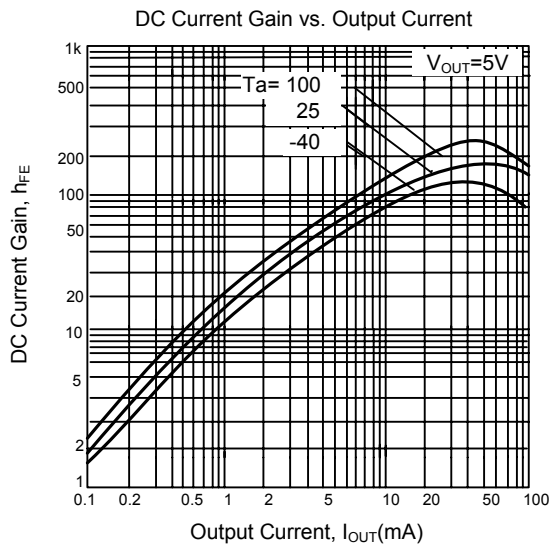
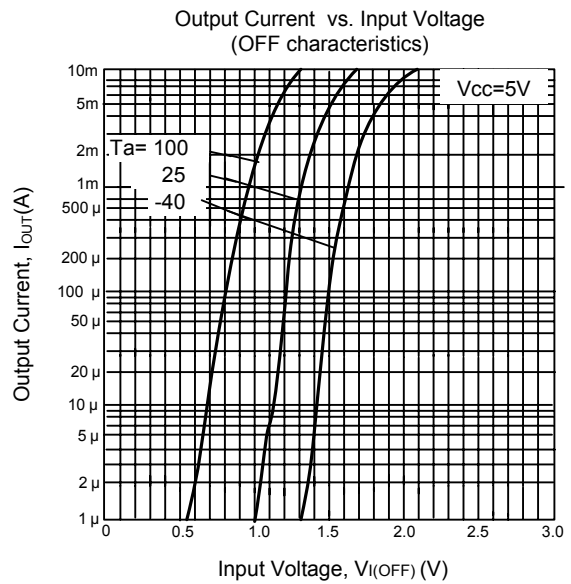
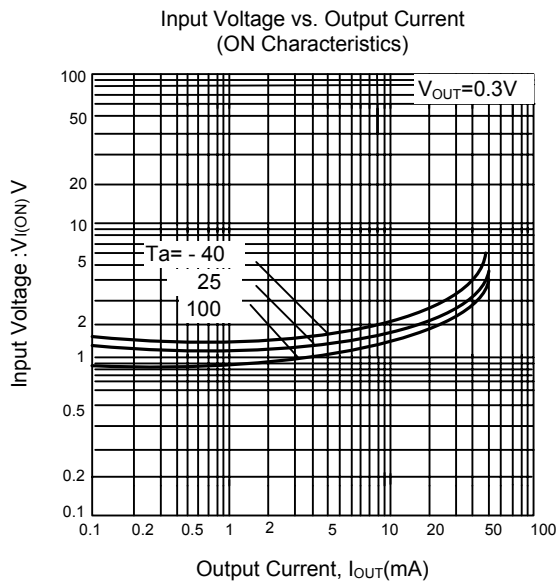
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS (Ta=25°C, unless others specified)

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

Note: Transition frequency of the device

## TYPICAL CHARACTERISTICS



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