



DTC114E

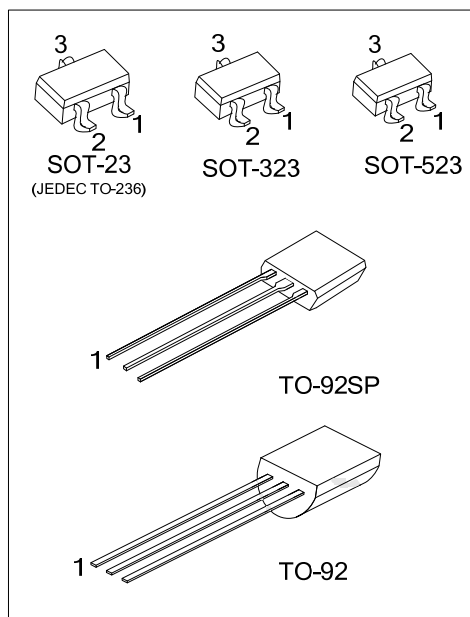
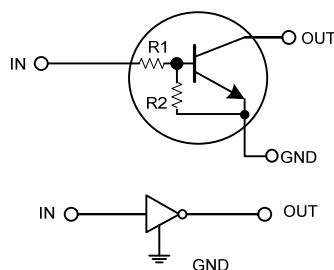
NPN SILICON TRANSISTOR

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	G	I	O	Tape Reel
DTC114EL-AL3-R	DTC114EG-AL3-R	SOT-323	G	I	O	Tape Reel
DTC114EL-AN3-R	DTC114EG-AN3-R	SOT-523	G	I	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-T92-R	DTC114EG-T92-R	TO-92	G	O	I	Tape Reel
DTC114EL-T9S-K	DTC114EG-T9S-K	TO-92SP	G	O	I	Bulk

<p>DTC114EL-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</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) G: Halogen Free, L: Lead Free</p>
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MARKING (FOR SOT-23/SOT-323/SOT-523 PACKAGE)

Product Code	Lead Free	Halogen Free
CB4E		

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

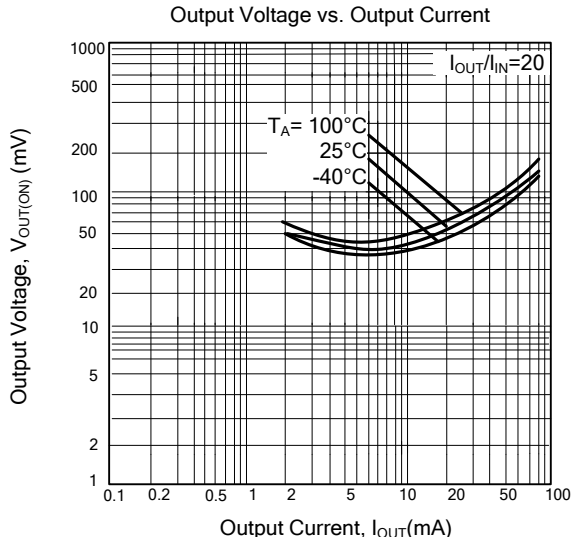
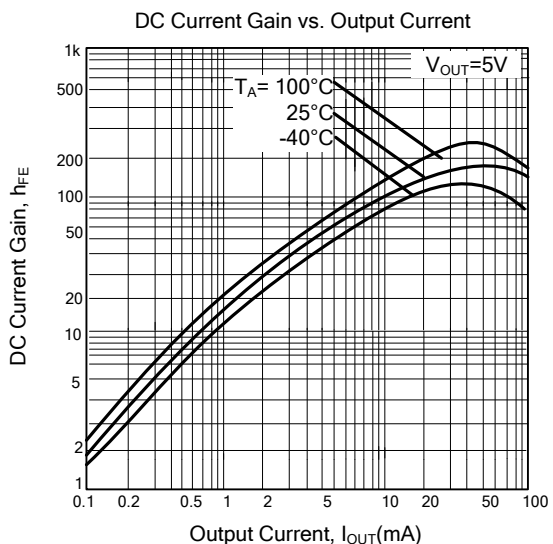
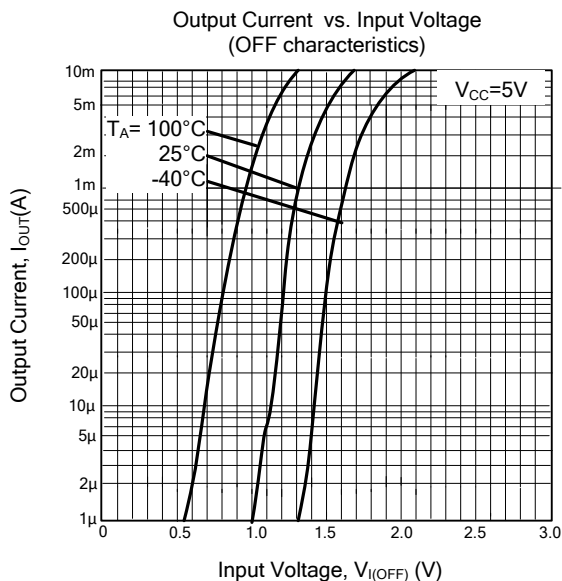
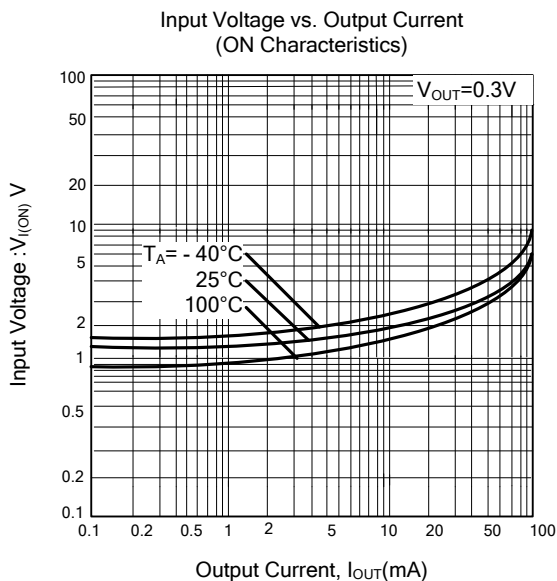
PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	50	V
Input Voltage		V_{IN}	-10 ~ +40	V
Output Current		I_{OUT}	100	mA
Power Dissipation	SOT-23/SOT-323	P_D	200	mW
	SOT-523		150	
	TO-92		625	
	TO-92SP		550	
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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	μA
DC Current Gain	h_{FE}	$V_{OUT}=5\text{V}$, $I_{OUT}=5\text{mA}$	30			
Input Resistance	R_1		7	10	13	K Ω
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



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