



DTC114E

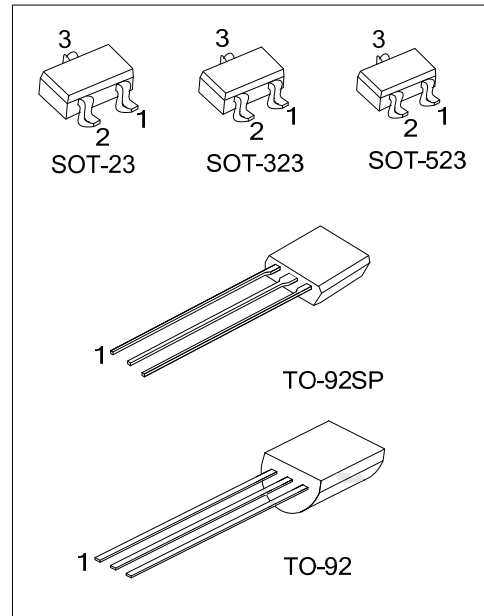
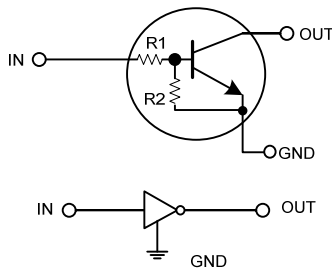
NPN SILICON TRANSISTOR

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

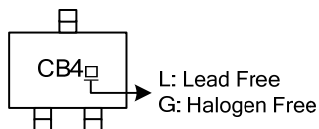


■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
DTC114E-AE3-R	DTC114EL-AE3-R	DTC114EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTC114E-AL3-R	DTC114EL-AL3-R	DTC114EG-AL3-R	SOT-323	G	I	O	Tape Reel
DTC114E-AN3-R	DTC114EL-AN3-R	DTC114EG-AN3-R	SOT-523	G	I	O	Tape Reel
DTC114E-T92-B	DTC114EL-T92-B	DTC114EG-T92-B	TO-92	G	O	I	Tape Box
DTC114E-T92-K	DTC114EL-T92-K	DTC114EG-T92-K	TO-92	G	O	I	Bulk
DTC114E-T9S-K	DTC114EL-T9S-K	DTC114EG-T9S-K	TO-92SP	G	O	I	Bulk

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

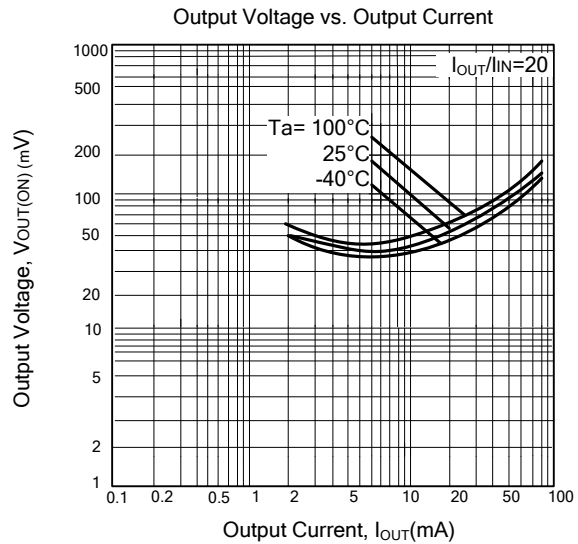
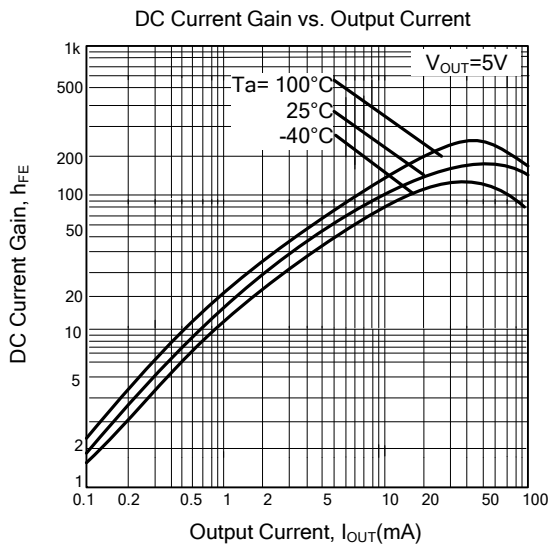
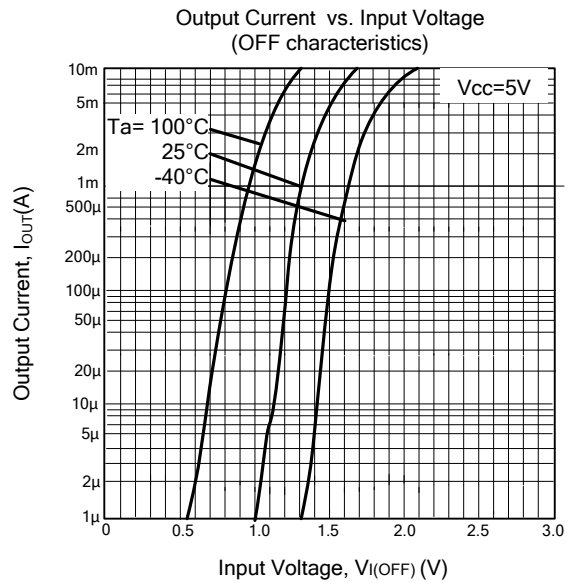
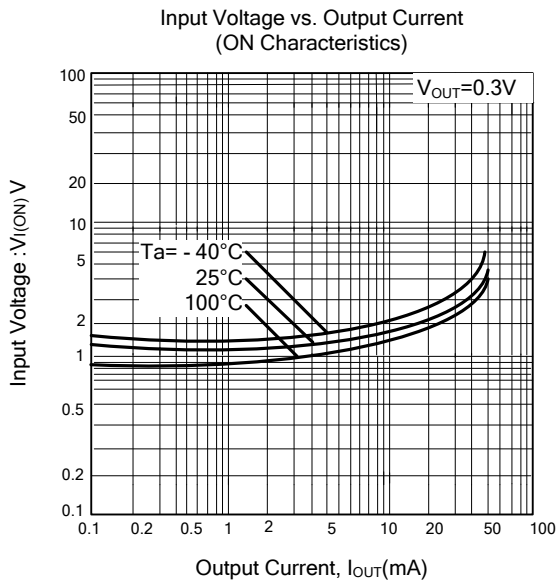
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (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			V
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	μA
DC Current Gain	h_{FE}	$V_{OUT} = 5V, I_{OUT} = 5mA$	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	$V_{CE} = 10V, I_E = -5mA, f = 100MHz$ (Note)		250		MHz

Note: Transition frequency of the device

TYPICAL CHARACTERISTICS



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