



DTC114E

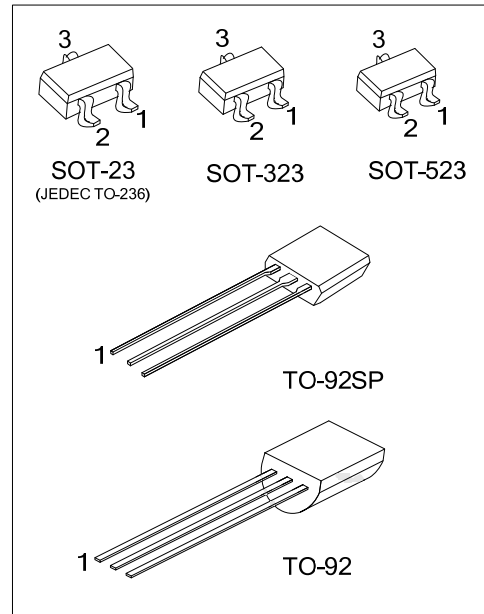
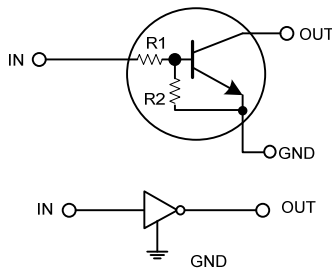
NPN SILICON TRANSISTOR

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	
-	DTC114EG-AE3-R	SOT-23	G	I	O	Tape Reel
-	DTC114EG-AL3-R	SOT-323	G	I	O	Tape Reel
-	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-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: G: GND I: IN O: OUT

<p>DTC114EG-AE3-R</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 and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-23 / SOT-323 / SOT-523	TO-92	TO-92SP
	<p>L: Lead Free G: Halogen Free Data Code</p>	<p>L: Lead Free G: Halogen Free Data Code</p>

■ 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 ~ +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	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

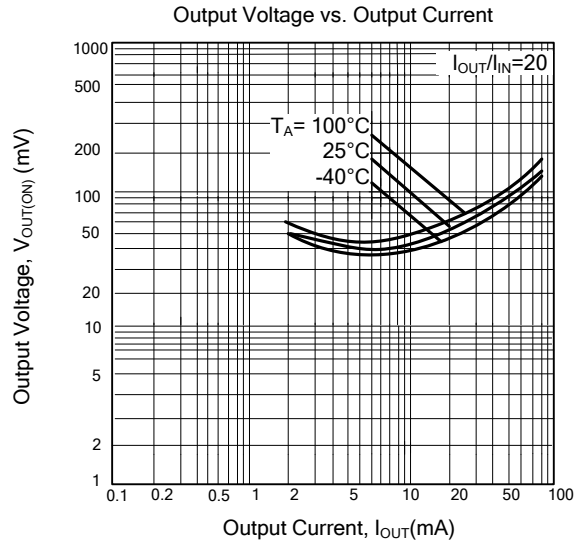
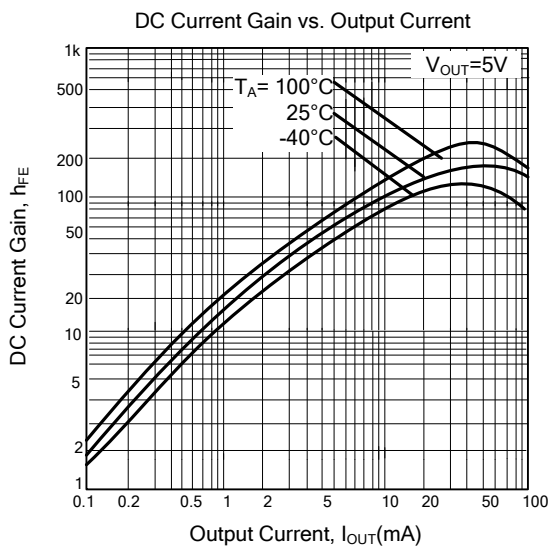
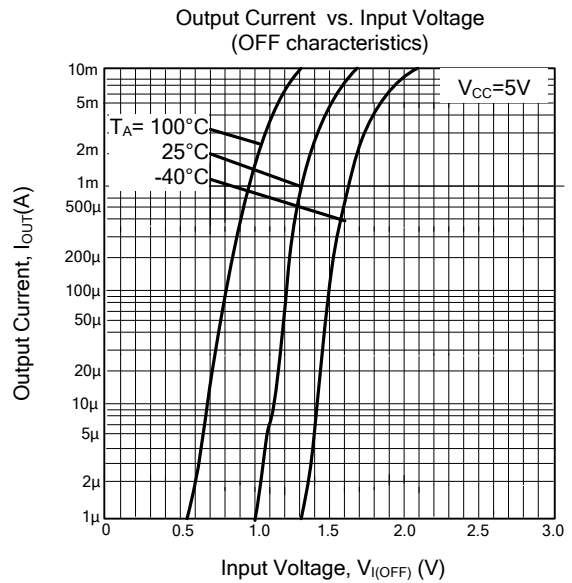
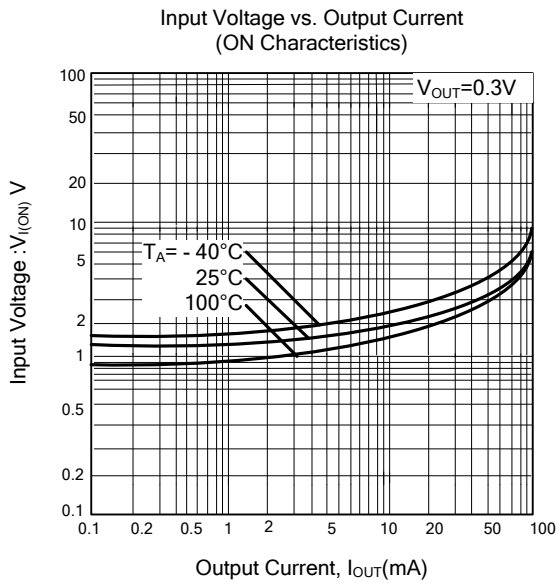
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{IN(OFF)}	V _{CC} = 5V, I _{OUT} = 100μA			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	KΩ
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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