

DTC144E

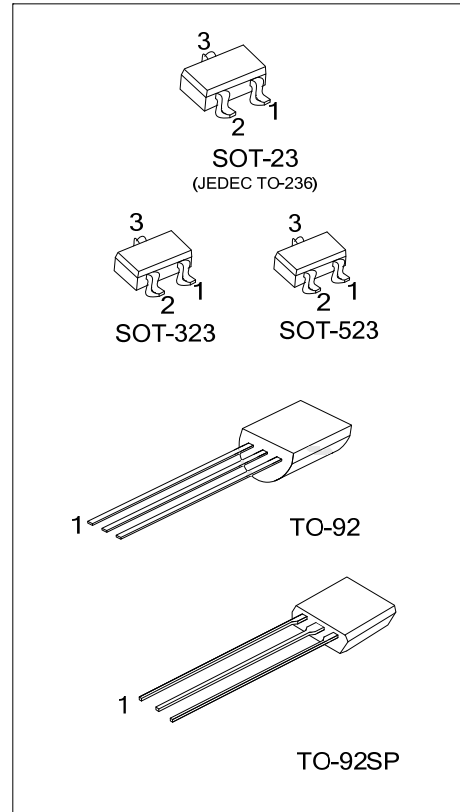
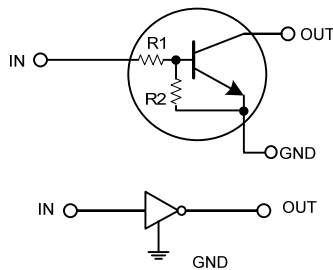
NPN SILICON TRANSISTOR

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

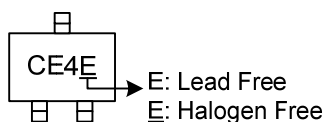


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTC144EL-AE3-R	DTC144EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTC144EL-AL3-R	DTC144EG-AL3-R	SOT-323	G	I	O	Tape Reel
DTC144EL-AN3-R	DTC144EG-AN3-R	SOT-523	G	I	O	Tape Reel
DTC144EL-T92-B	DTC144EG-T92-B	TO-92	G	O	I	Tape Box
DTC144EL-T92-K	DTC144EG-T92-K	TO-92	G	O	I	Bulk
DTC144EL-T92-R	DTC144EG-T92-R	TO-92	G	O	I	Tape Reel
DTC144EL-T9S-K	DTC144EG-T9S-K	TO-92SP	G	O	I	Bulk

<p>DTC144EL-AE3-R</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</p>
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■ MARKING (For SOT Package)



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

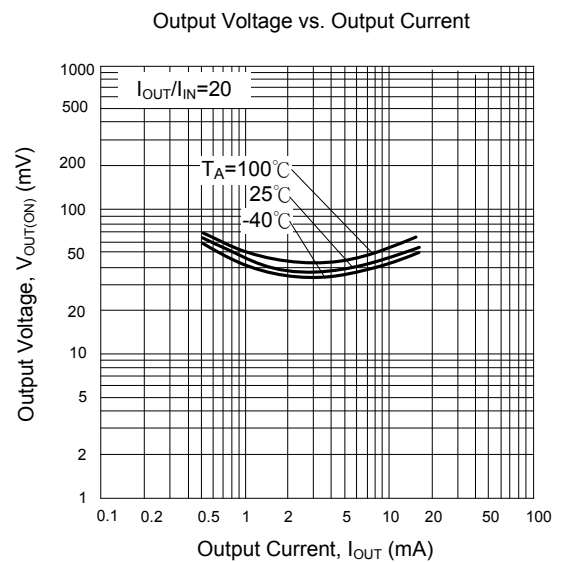
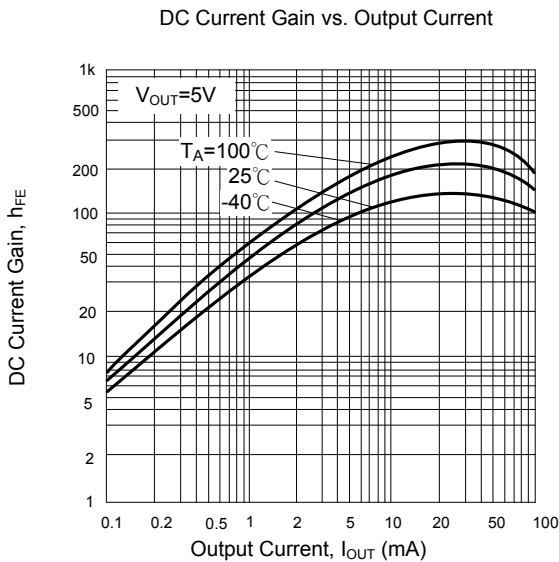
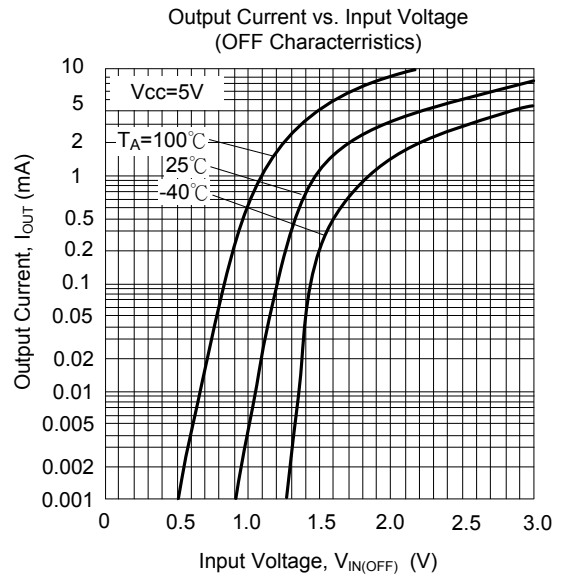
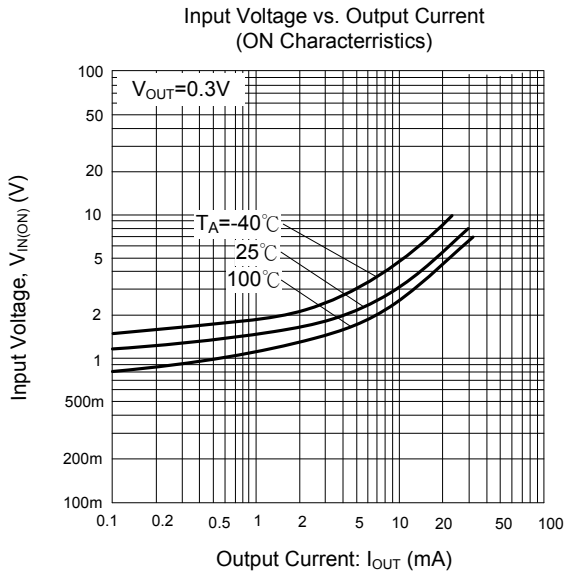
PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	50	V
Input Voltage		V_{IN}	-10 ~ +40	V
Output Current		I_{OUT}	30	mA
		$I_{OUT(MAX)}$	100	mA
Power Dissipation	TO-92SP	P_D	550	mW
	TO-92		625	
	SOT-523		150	
	SOT-23/SOT-323		200	
Junction Temperature		T_J	+150	$^\circ\text{C}$
Storage Temperature		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 otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = 5V, I_{OUT} = 100\mu\text{A}$			0.5	V
	$V_{IN(ON)}$	$V_{OUT} = 0.3V, I_{OUT} = 20\text{mA}$	3			
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}	$V_{IN} = 5V$			0.18	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = 50V, V_{IN} = 0V$			0.5	μA
DC Current Gain	h_{FE}	$V_{OUT} = 5V, I_{OUT} = 5\text{mA}$	68			
Input Resistance	R1		32.9	47	61.1	k Ω
Resistance Ratio	R2/R1		0.8	1	1.2	
Transition Frequency	f_T	$V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$		250		MHz

TYPICAL CHARACTERISTICS



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