

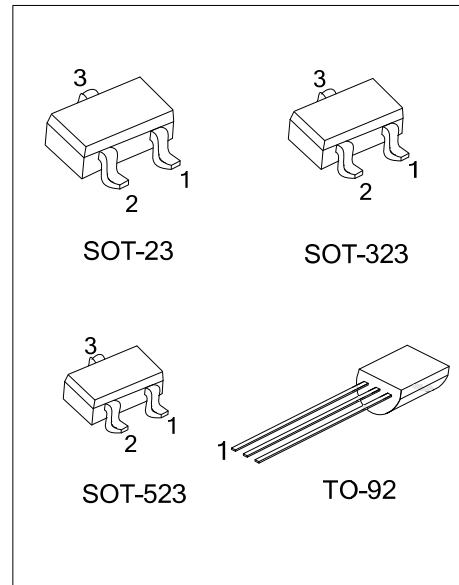
# DTA124E

## PNP EPITAXIAL SILICON TRANSISTOR

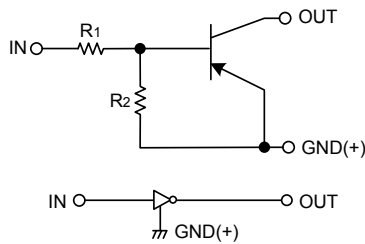
### PNP DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

#### ■ FEATURES

- \*Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see the equivalent circuit).
- \*The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- \*Only the on / off conditions need to be set for operation, making device design easy.



#### ■ EQUIVALENT CIRCUIT



#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	DTA124EG-AE3-R	SOT-23	G	I	O	Tape Reel
-	DTA124EG-AL3-R	SOT-323	G	I	O	Tape Reel
-	DTA124EG-AN3-R	SOT-523	G	I	O	Tape Reel
DTA124EL-T92-B	DTA124EG-T92-B	TO-92	G	O	I	Tape Box
DTA124EL-T92-K	DTA124EG-T92-K	TO-92	G	O	I	Bulk

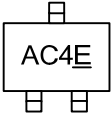
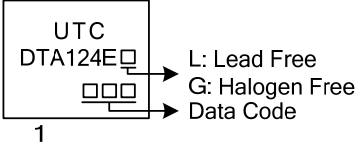
Note: Pin Assignment: G: GND I: IN O: OUT

<p>DTA124EG-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                  (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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# DTA124E

## PNP EPITAXIAL SILICON TRANSISTOR

### MARKING

SOT-23 / SOT-323 / SOT-523	TO-92
 <p>A schematic diagram of a SOT package marking. It shows a rectangular box with the text "AC4E" inside. Above the box is a small square, and below the box are two small squares.</p>	 <p>A schematic diagram of a TO-92 package marking. It shows a rectangular box with the text "UTC" and "DTA124E" inside. To the right of the box are three small squares. Below the box is the number "1".</p> <p>L: Lead Free G: Halogen Free Data Code</p>

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

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		$V_{CC}$	-50	V
Input Voltage		$V_{IN}$	-40 ~ +10	V
Output Current		$I_C$	-100	mA
		$I_O$	-30	
Power Dissipation	SOT-23/SOT-323	$P_D$	200	mW
	SOT-523		150	
	TO-92		625	
Junction Temperature		$T_J$	150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-40 ~ +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	$V_{I(OFF)}$	$V_{CC} = -5V, I_{OUT} = -100\mu\text{A}$			-0.5	V
	$V_{I(ON)}$	$V_{OUT} = -0.2V, I_{OUT} = -5\text{mA}$	-3			
Output Voltage	$V_{O(ON)}$	$I_{OUT}/I_{IN} = -10\text{mA} / -0.5\text{mA}$		-0.1	-0.3	V
Input Current	$I_I$	$V_{IN} = -5V$			-0.36	mA
Output Current	$I_{O(OFF)}$	$V_{CC} = -50V, V_{IN} = 0V$			-0.5	$\mu\text{A}$
DC Current Gain	$G_I$	$V_{OUT} = -5V, I_{OUT} = -5\text{mA}$	56			
Input Resistance	R1		15.4	22	28.6	k $\Omega$
Resistance Ratio	R2/R1		0.8	1	1.2	
Transition Frequency	$f_T$	$V_{CE} = -10V, I_E = 5\text{mA}, f = 100\text{MHz}$ (Note)		250		MHz

Note: Transition frequency of the device

## TYPICAL CHARACTERISTICS

Fig.1 Input voltage vs.output current  
(ON characteristics)

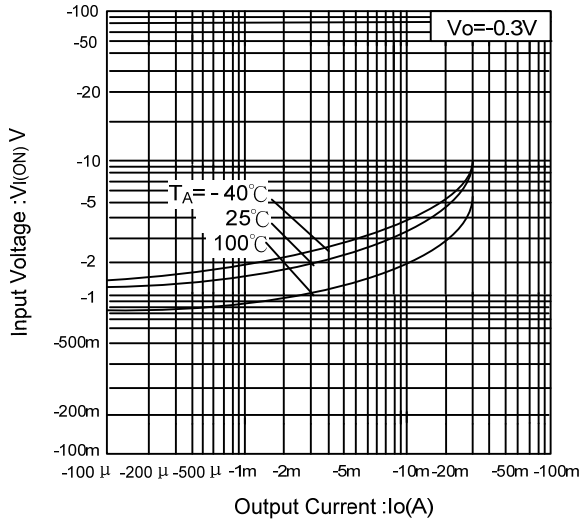


Fig.2 Output current vs Input voltage.  
(OFF characteristics)

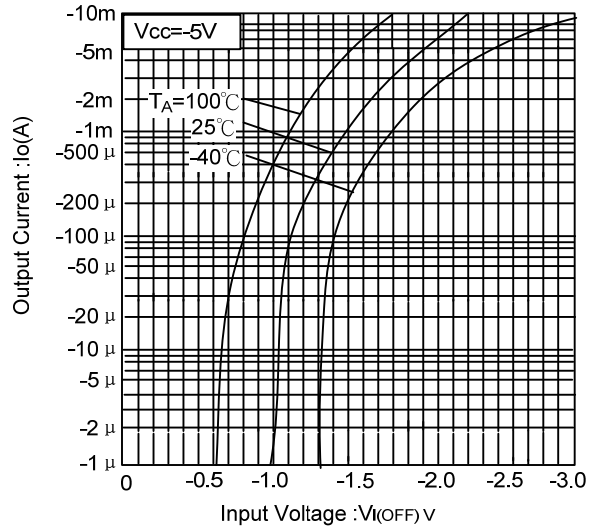


Fig.3 DC current gain vs.output current

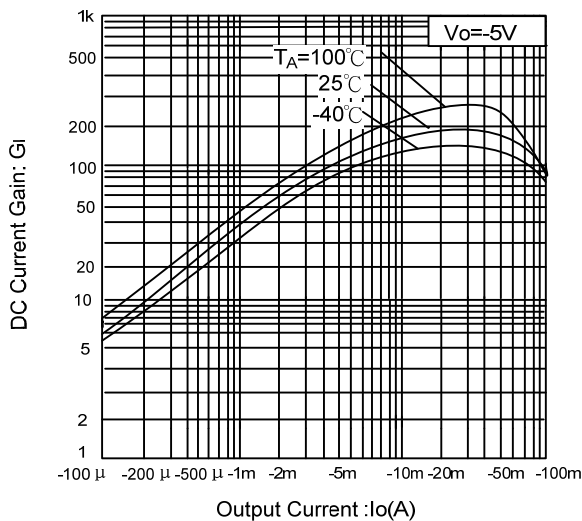
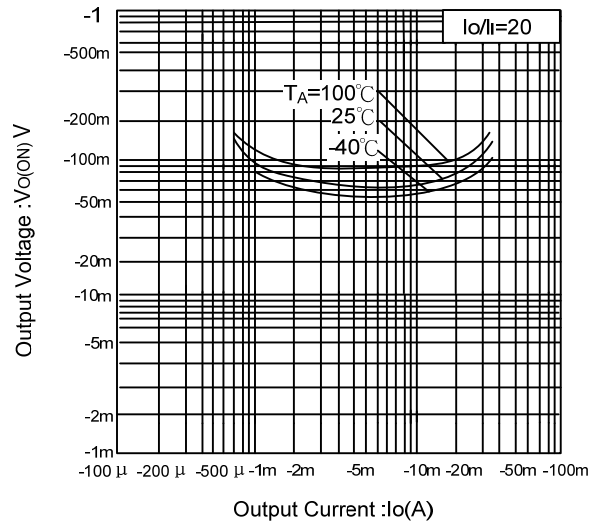


Fig.4 Output voltage vs.output current



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