



DTD143E

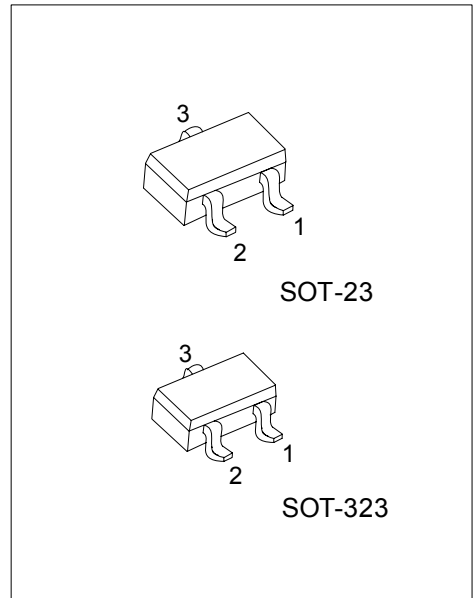
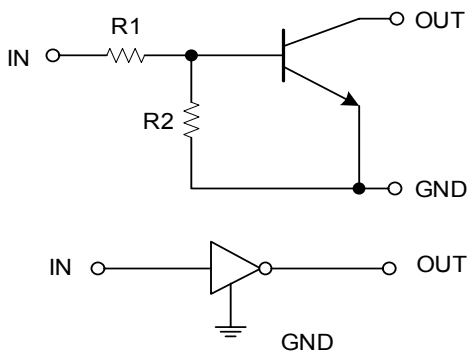
NPN EPITAXIAL SILICON TRANSISTOR

DIGITAL TRANSISTORS (BUILT-IN RESISTORS)

■ FEATURES

- * Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- * The bias resistors consist of thin film resistors with complete isolation to allow negative 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



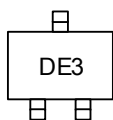
*Pb-free plating product number:DTD143EL

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTD143E-AE3-6-R	DTD143EL-AE3-6-R	SOT-23	G	I	O	Tape Reel
DTD143E-AL3-6-R	DTD143EL-AL3-6-R	SOT-323	G	I	O	Tape Reel

<p>DTD143EL-AE3-6-R</p> <p>(1)Packing Type (2)Pin Assignment (3)Package Type (4)Lead Plating</p>	<p>(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23, AL3: SOT-323 (4) L: Lead Free Plating, Blank: Pb/Sn</p>
--	--

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10 ~ +30	V
Output Current	I_{OUT}	500	mA
Power Dissipation	P_D	200	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.

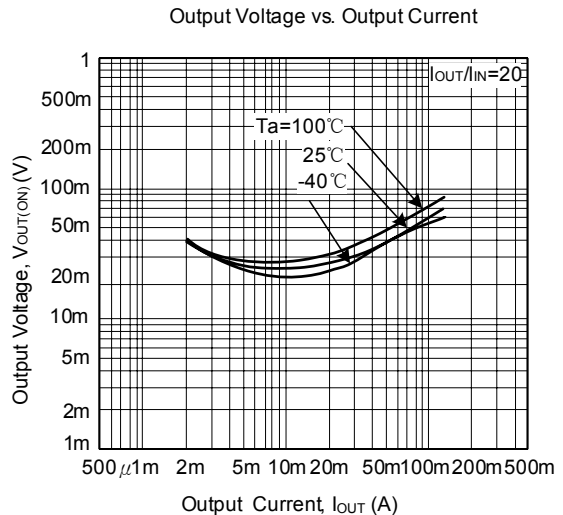
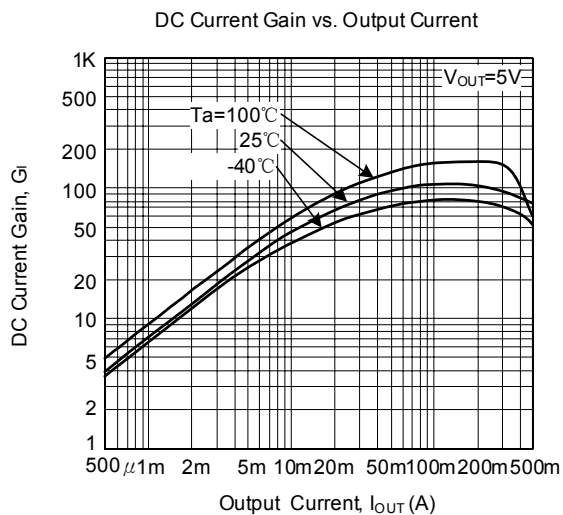
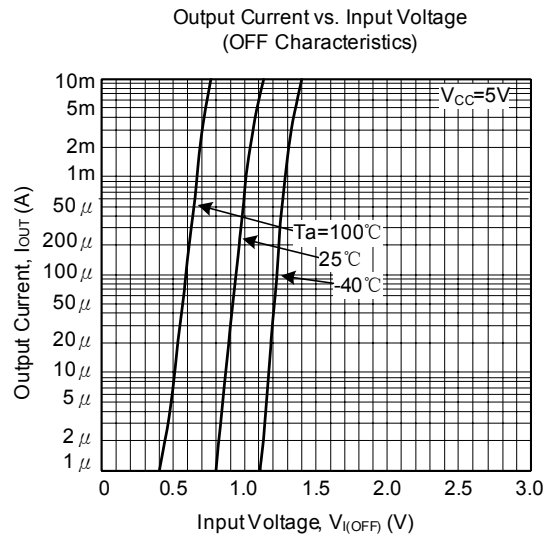
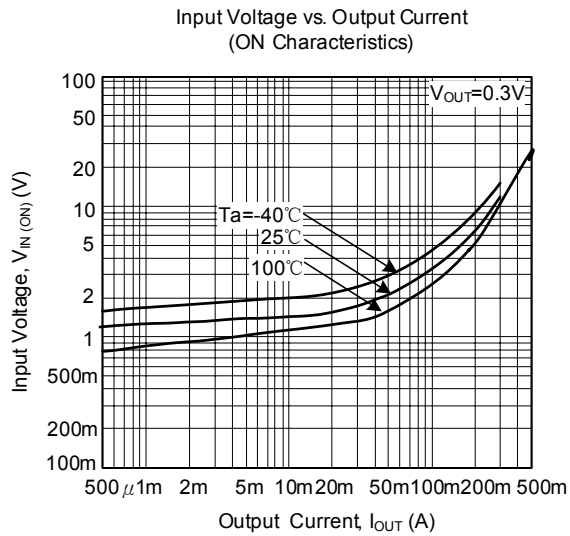
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = 5V, I_{OUT} = 100\mu A$			0.5	V
	$V_{IN(ON)}$	$V_{OUT} = 0.3V, I_{OUT} = 20mA$	3			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN} = 50mA/2.5mA$		0.1	0.3	V
Input Current	I_{IN}	$V_{IN} = 5V$			1.8	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = 50V, V_{IN} = 0V$			0.5	μA
DC Current Gain	G_{IN}	$V_{OUT} = 5V, I_{OUT} = 50mA$	47			
Input Resistance	R_1		3.29	4.7	6.11	K Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Transition Frequency	f_T	$V_{CE} = 10V, I_E = -50mA, f = 100MHz$ *		200		MHz

* Transition frequency of the device

■ TYPICAL CHARACTERISTIC



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.