



## DTD143E

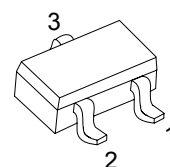
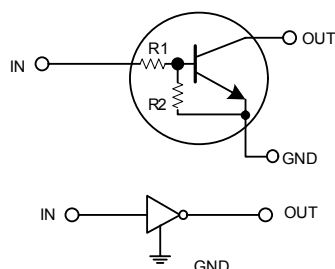
## NPN SILICON TRANSISTOR

### DIGITAL TRANSISTORS (BUILT-IN RESISTORS)

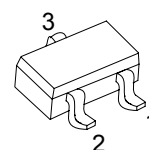
#### FEATURES

- \* 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



SOT-23



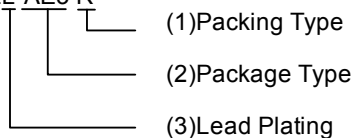
SOT-323

\*Pb-free plating product number: DTD143EL

#### ORDERING INFORMATION

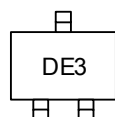
Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTD143E-AE3-R	DTD143EL-AE3-R	SOT-23	G	I	O	Tape Reel
DTD143E-AL3-R	DTD143EL-AL3-R	SOT-323	G	I	O	Tape Reel

DTD143EL-AE3-R



- (1) R: Tape Reel
- (2) AE3: SOT-23, AL3: SOT-323
- (3) L: Lead Free Plating, Blank: Pb/Sn

#### 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.

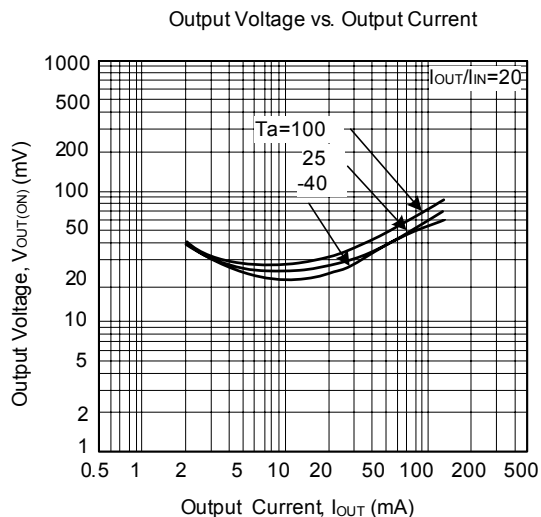
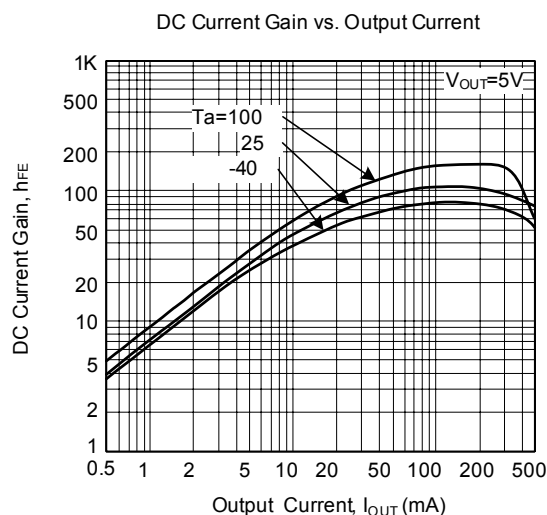
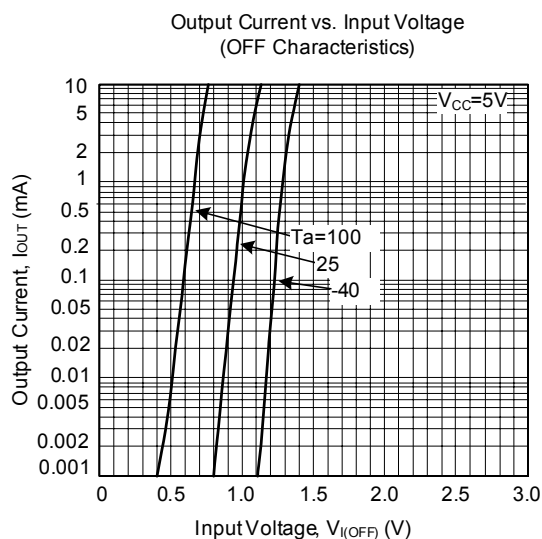
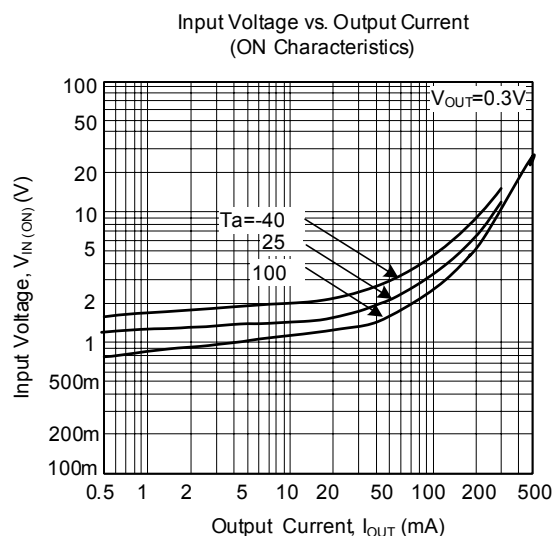
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ 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	$\mu A$
DC Current Gain	$h_{FE}$	$V_{OUT}=5V, I_{OUT}=50mA$	47			
Input Resistance	$R_1$		3.29	4.7	6.11	K $\Omega$
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



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