



## DTD113Z

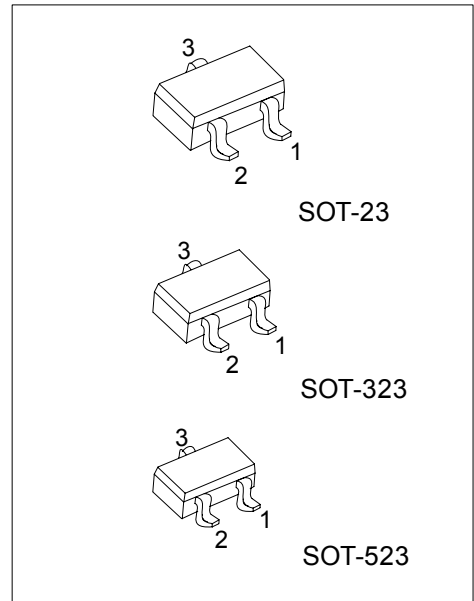
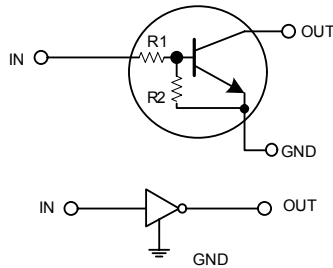
## NPN SILICON TRANSISTOR

### 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



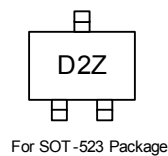
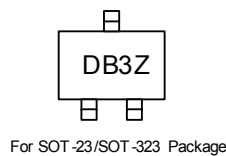
\*Pb-free plating product number:DTD113ZL

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
DTD113Z-AE3-R	DTD113ZL-AE3-R	SOT-23	G	I	O	Tape Reel
DTD113Z-AL3-R	DTD113ZL-AL3-R	SOT-323	G	I	O	Tape Reel
DTD113Z-AN3-R	DTD113ZL-AN3-R	SOT-523	G	I	O	Tape Reel

<p>DTD113ZL-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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#### MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		$V_{CC}$	50	V
Input Voltage		$V_{IN}$	-5 ~ +10	V
Output Current		$I_{OUT}$	500	mA
Power Dissipation	SOT-23/SOT-323	$P_C$	200	mW
	SOT-523		150	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.

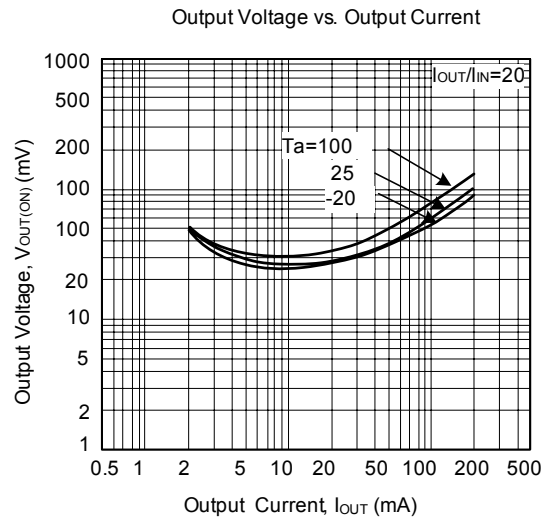
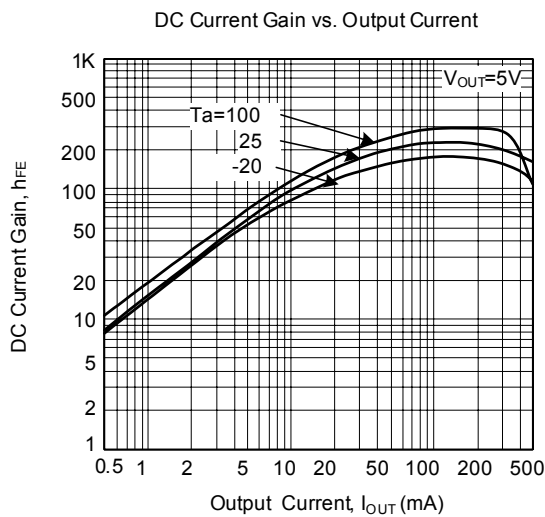
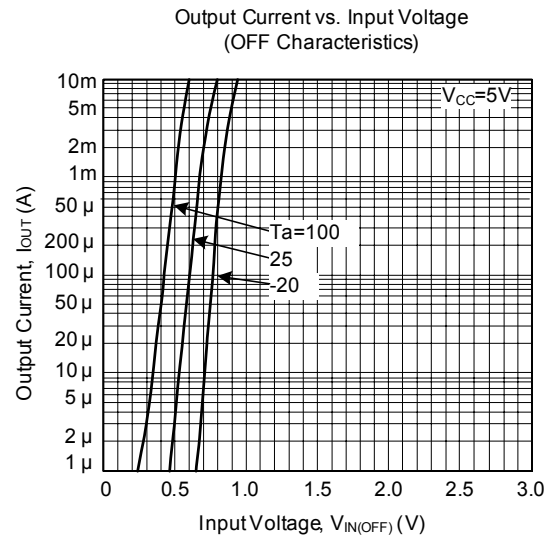
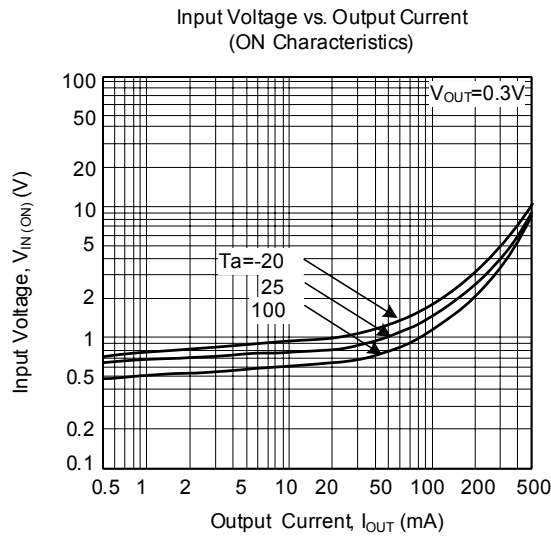
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL SPECIFICATIONS (Ta=25°C, unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	$V_{CC} = 5V, I_{OUT} = 100\mu A$			0.3	V
	$V_{IN(ON)}$	$V_{OUT} = 0.3V, I_{OUT} = 20mA$	1.5			
Output Voltage	$V_{OUT(ON)}$	$I_{OUT}/I_{IN} = 50mA/2.5mA$		0.1	0.3	V
Input Current	$I_{IN}$	$V_{IN} = 5V$			7.2	mA
Output Current	$I_{OUT(OFF)}$	$V_{CC} = 50V, V_{IN} = 0V$			0.5	$\mu A$
DC Current Gain	$h_{FE}$	$V_{OUT} = 5V, I_{OUT} = 50mA$	82			
Input Resistance	$R_1$		0.7	1	1.3	K $\Omega$
Resistor Ratio	$R_2/R_1$		8	10	12	
Transition Frequency	$f_T$	$V_{CE} = 10V, I_E = -50mA, f = 100MHz$		200		MHz

Note: Transition frequency of the device

## TYPICAL CHARACTERISTICS



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