



DTD113Z

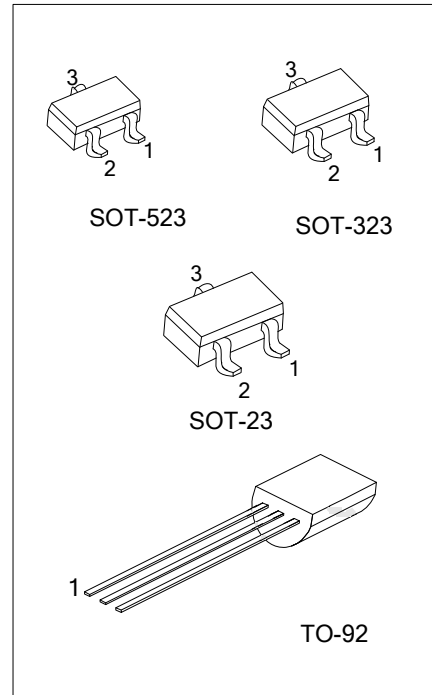
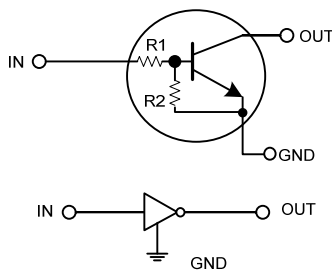
NPN SILICON TRANSISTOR

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

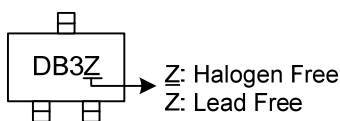


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTD113ZL-AE3-R	DTD113ZG-AE3-R	SOT-23	G	I	O	Tape Reel
DTD113ZL-AL3-R	DTD113ZG-AL3-R	SOT-323	G	I	O	Tape Reel
DTD113ZL-AN3-R	DTD113ZG-AN3-R	SOT-523	G	I	O	Tape Reel
DTD113ZL-T92-B	DTD113ZG-T92-B	TO-92	G	O	I	Tape Box
DTD113ZL-T92-K	DTD113ZG-T92-K	TO-92	G	O	I	Bulk
DTD113ZL-T92-R	DTD113ZG-T92-R	TO-92	G	O	I	Tape Reel

<p>DTD113ZL-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</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) L: Lead Free, G: Halogen Free</p>
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=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
	TO-92		625	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.

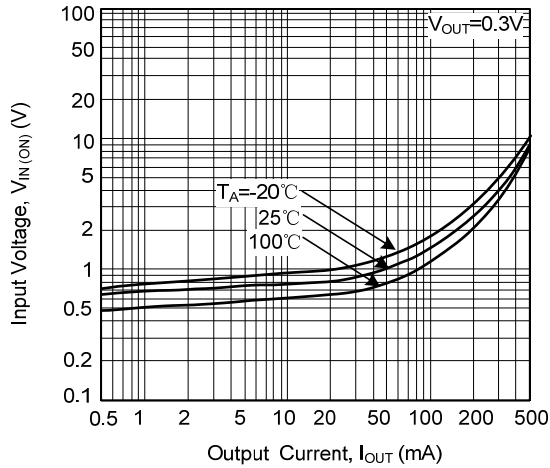
■ ELECTRICAL SPECIFICATIONS (T_A=25°C, unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{IN(OFF)}	V _{CC} = 5V, I _{OUT} = 100μA			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	μA
DC Current Gain	h _{FE}	V _{OUT} = 5V, I _{OUT} = 50mA	82			
Input Resistance	R ₁		0.7	1	1.3	KΩ
Resistor Ratio	R ₂ /R ₁		8	10	12	
Transition Frequency	f _T	V _{CE} = 10V, I _E = -50mA, f = 100MHz (Note)		200		MHz

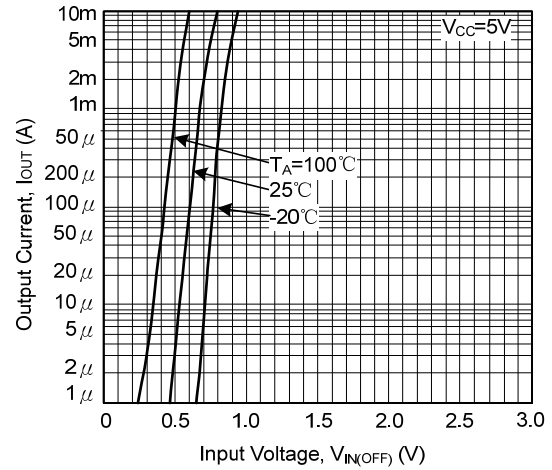
Note: Transition frequency of the device

TYPICAL CHARACTERISTICS

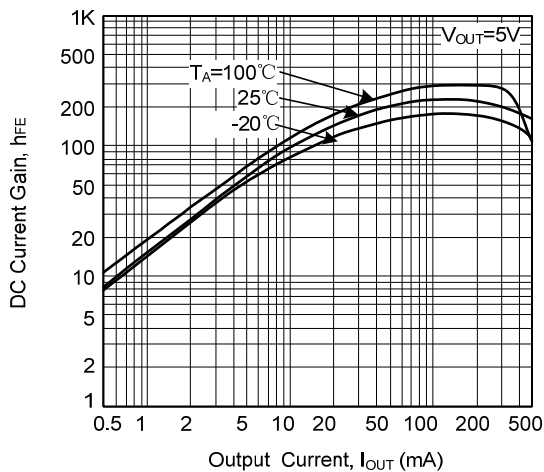
Input Voltage vs. Output Current
(ON Characteristics)



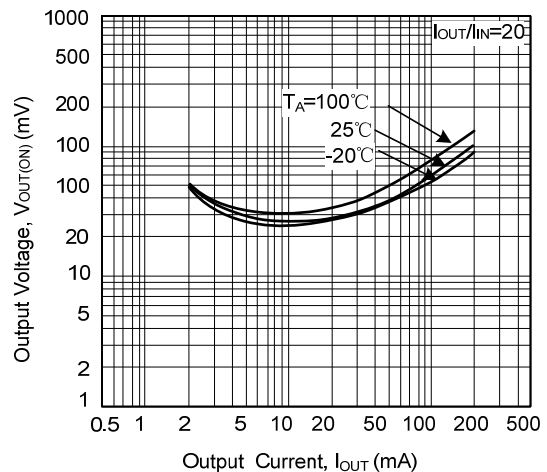
Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current



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