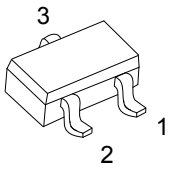
DTB113Z

PNP SILICON TRANSISTOR

DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

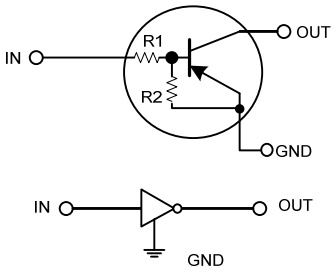


SOT-23

■ FEATURES

* Built-in Bias Resistors that Implies Easy ON/OFF Applications.
* The Bias Resistors Are Thin-Film Resistors with Complete Isolation to Allow Positive Input.

■ EQUIVALENT CIRCUIT

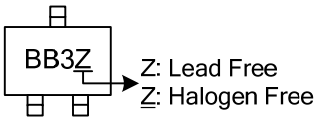


■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
DTB113ZL-AE3-R	DTB113ZG-AE3-R	SOT-23	G	I	O	Tape Reel

DTB113ZL-AE3-R (1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATING (T_A=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-10 ~ +5	V
Output Current	I_C	-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.

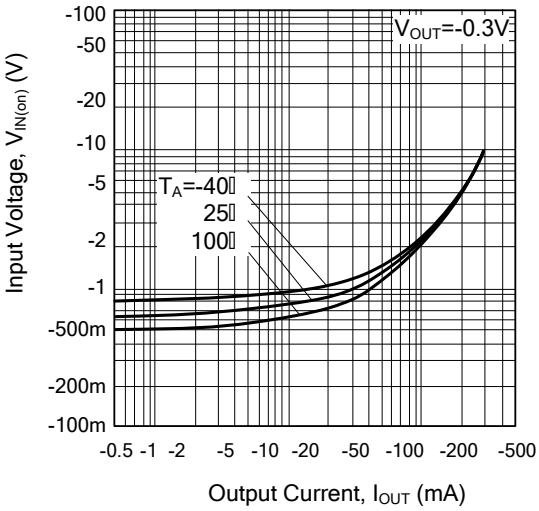
■ ELECTRICAL CHARACTERISTICS (T_A=25°C)

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	-3			
Output Voltage	$V_{OUT(ON)}$	I_{OUT}/I_{IN}= -50mA/-2.5mA			-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	56			
Input Resistance	R_1		0.7	1	1.3	KΩ
Resistance Ratio	R_2/R_1		8	10	12	
Transition Frequency	f_T	V_{CE}=-10V, I_E= 50mA, f=100MHz(Note)		200		MHz

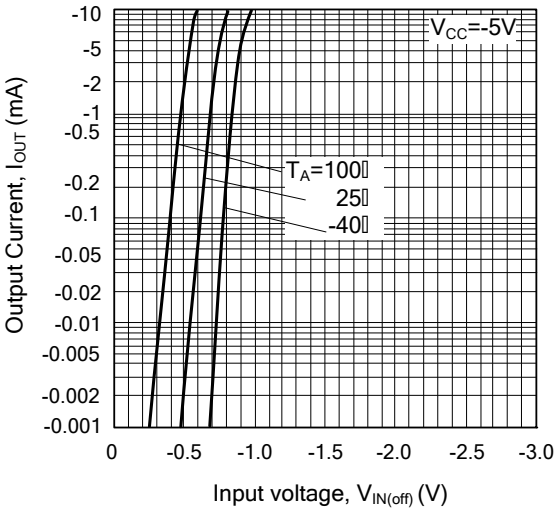
Note: Transition frequency of the device

■ TYPICAL CHARACTERISTICS

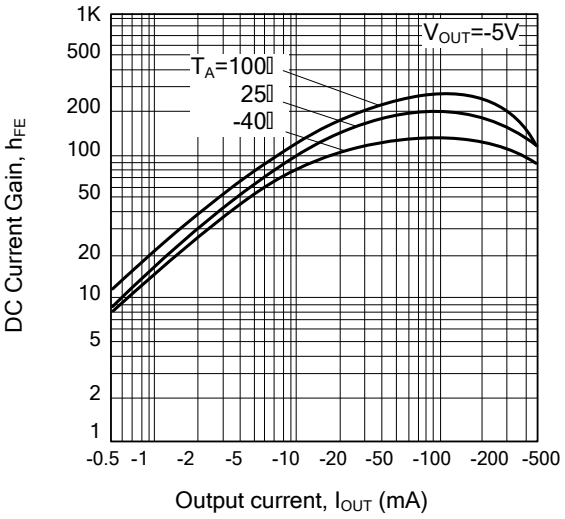
Input Voltage vs. Output Current
(ON Characteristics)



Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current