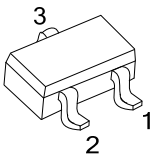
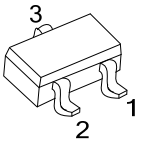
DTD114E

NPN SILICON TRANSISTOR

NPN DIGITAL TRANSISTOR (BUILT- IN BIAS RESISTORS)



SOT-23
(JEDEC TO-236)

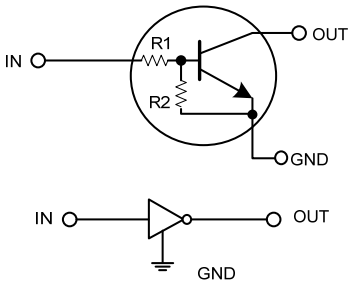


SOT-323

■ 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

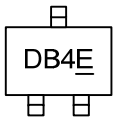
Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
DTD114EG-AE3-R	SOT-23	G	I	O	Tape Reel
DTD114EG-AL3-R	SOT-323	G	I	O	Tape Reel

Note: Pin Assignment: G: GND I: IN O: OUT

DTD114EG-AE3-R

(1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) AE3: SOT-23, AL3: SOT-323
(3)Green Package	(3) G: Halogen Free and Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless others specified)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~+40	V
Output Current	I_{OUT}	500	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-40 ~ +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.

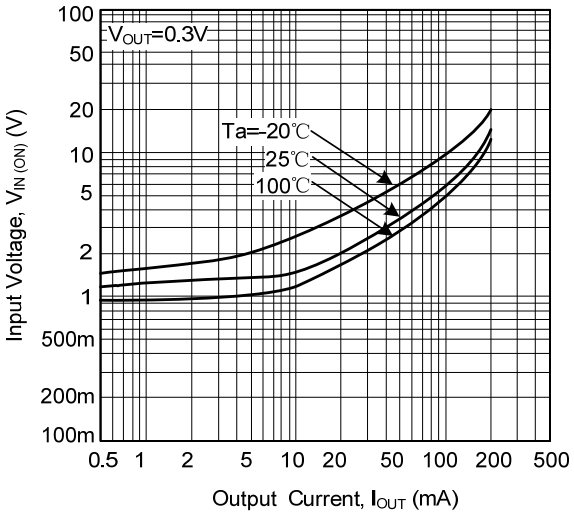
■ ELECTRICAL SPECIFICATIONS (T_A=25°C, unless others specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{IN(OFF)}$	V_{CC} =5V, I_{OUT} =100μA			0.5	V
	$V_{IN(ON)}$	V_{OUT} =0.3V, I_{OUT} =10mA	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			0.88	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		7	10	13	kΩ
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

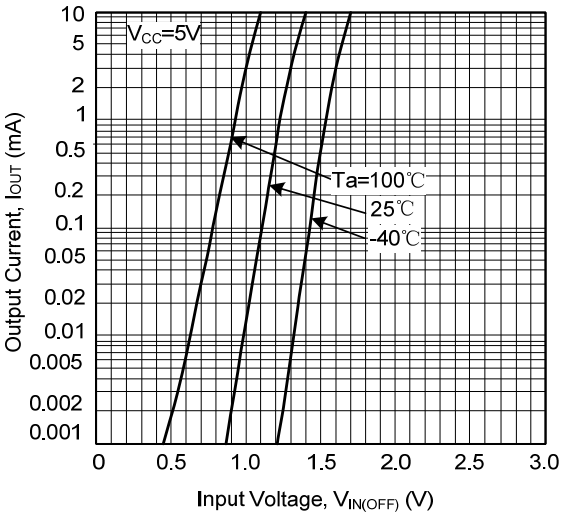
*Transition frequency of the device

■ TYPICAL CHARACTERISTICS

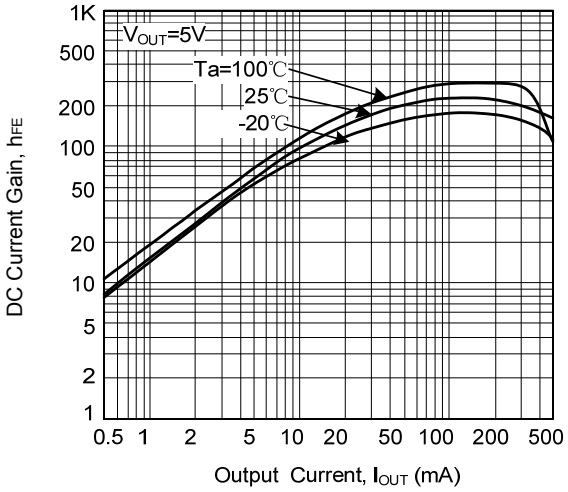
Input Voltage vs. Output Current
(ON Characteristics)



Output Current vs. Input Voltage
(OFF Characteristics)



DC Current Gain vs. Output Current



Output Voltage vs. Output Current