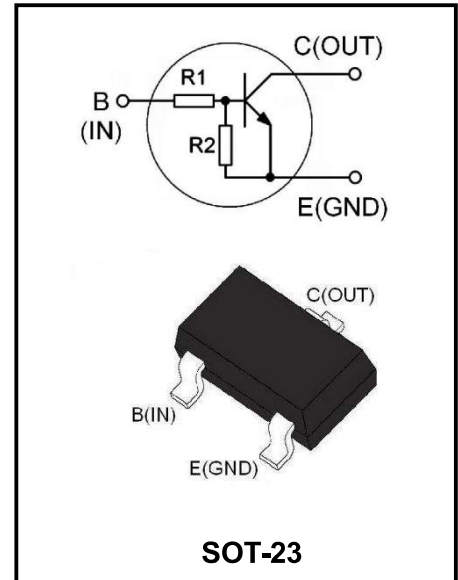


### Features

- Built-In Biasing Resistors,  $R_1 = 1k\Omega$ ,  $R_2 = 10k\Omega$
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- Only the on/off conditions need to be set for operation, making the circuit design easy.
- Complementary PNP Types: DTB113Z



Marking Code	
DTD113Z	G21

### Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Value	Unit
Supply voltage	$V_{CC}$	50	V
Input voltage	$V_{IN}$	-5 ~ +10	V
Output current	$I_{OUT}$	500	mA
Power dissipation	$P_D$	200	mW
Junction temperature	$T_j$	150	℃
Storage temperature	$T_{stg}$	-55~150	℃

### Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Input voltage	$V_{IN(off)}$	$V_{CC}=5V, I_O=100\mu A$			0.3	V
	$V_{IN(on)}$	$V_O=0.3V, I_O=20\text{ mA}$	1.5			V
Output voltage	$V_{OUT(on)}$	$I_{OUT}=50mA, I_{IN}=2.5mA$		0.1	0.3	V
Input current	$I_I$	$V_{IN}=5V$			7.2	mA
Output current	$I_{OUT(off)}$	$V_{CC}=50V, V_I=0$			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 $\Omega$
Resistance ratio	$R_2/R_1$		8	10	12	
Transition frequency	$f_T$	$V_{CE}=10V, I_E=-50mA, f=100MHz$		200		MHz

Typical Characteristic

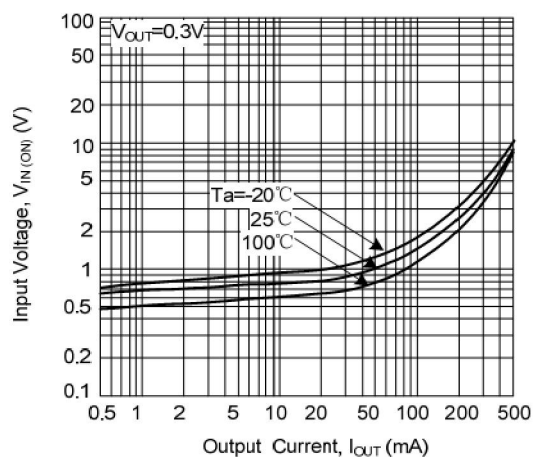


Figure 1. ON Characteristic

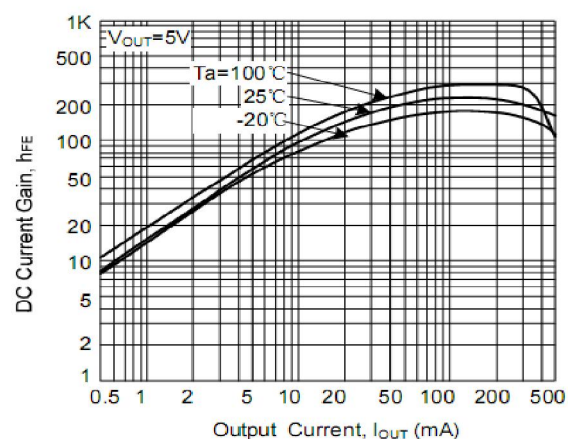


Figure2. DC current Gain

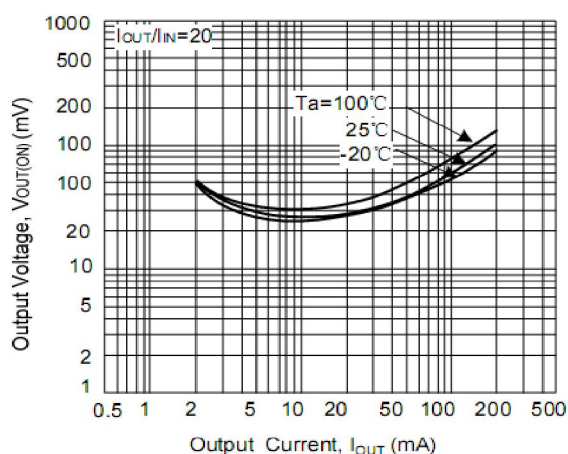


Figure 3. Output voltage vs. output current

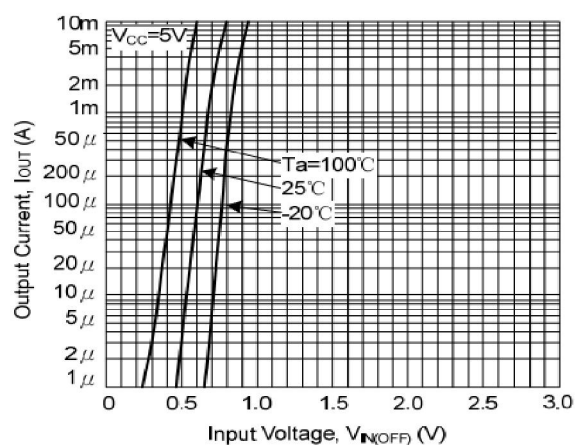


Figure 4. Output current vs. input voltage

**Ordering information**

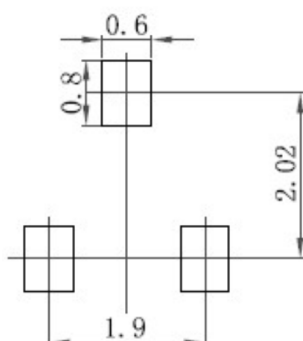
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

**Package Dimensions**

**SOT-23**

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

**The recommended mounting pad size**



## Disclaimer

The information presented in this document is for reference only. Guangdong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.