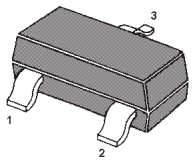
Plastic-Encapsulate Transistors

DTD123YCA DIGITAL TRANSISTOR(NPN)

FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy



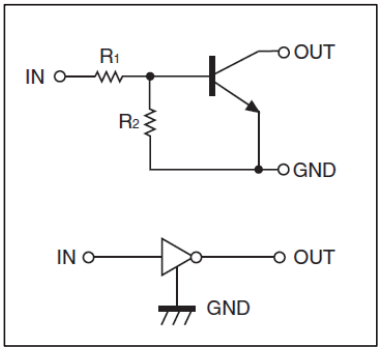
MARKING: F62

1.Base (IN) 2.Emitter (GND)
3.Collector (OUT)
SOT-23 Plastic Package

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Symbol	Parameter	Limits	Unit
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-5～+12	V
I_O	Output Current	500	mA
P_D	Power Dissipation	200	mW
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

Equivalent Circuit



ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V,I_O=100μA	0.3			V
	$V_{I(on)}$	V_O=0.3V,I_O=20mA			2	V
Output voltage	$V_{O(on)}$	I_O/I_I=50mA/2.5mA		0.1	0.3	V
Input current	I_I	V_I=5V			3.6	mA
Output current	$I_{O(off)}$	V_{CC}=50V,V_I=0			0.5	μA
DC current gain	G_I	V_O=5V,I_O=50mA	56			
Input resistance	R_1		1.54	2.2	2.86	kΩ
Resistance ratio	R_2/R_1		3.6	4.5	5.5	
Transition frequency	f_T	V_O=10V,I_O=5mA,f=100MHz		200		MHz

Typical Characteristics

Fig.1 Input Voltage vs. Output Current
(ON Characteristics)

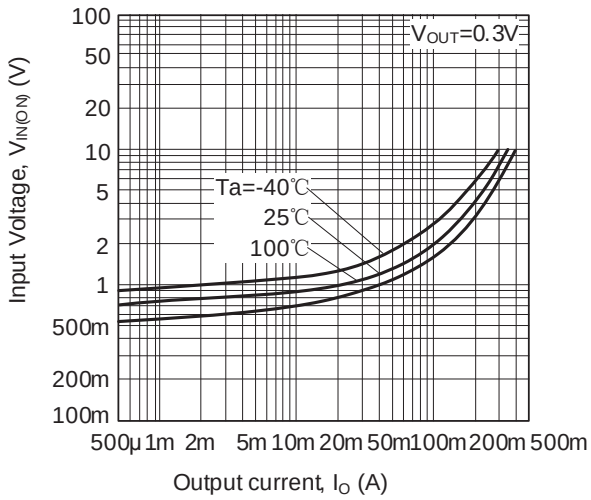


Fig.2 Output Current vs. Input Voltage
(OFF Characteristics)

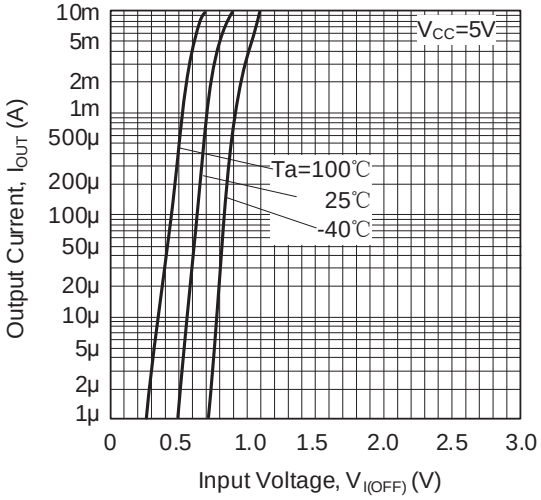


Fig.3 DC Current Gain vs. Output Current

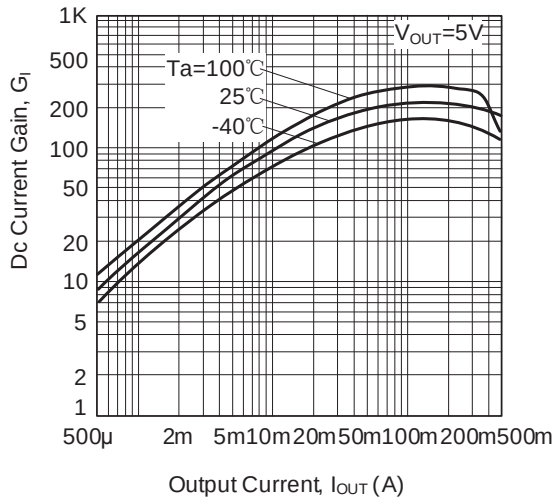
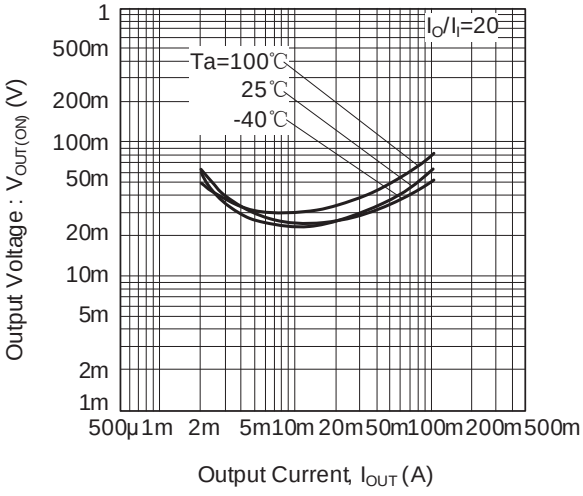
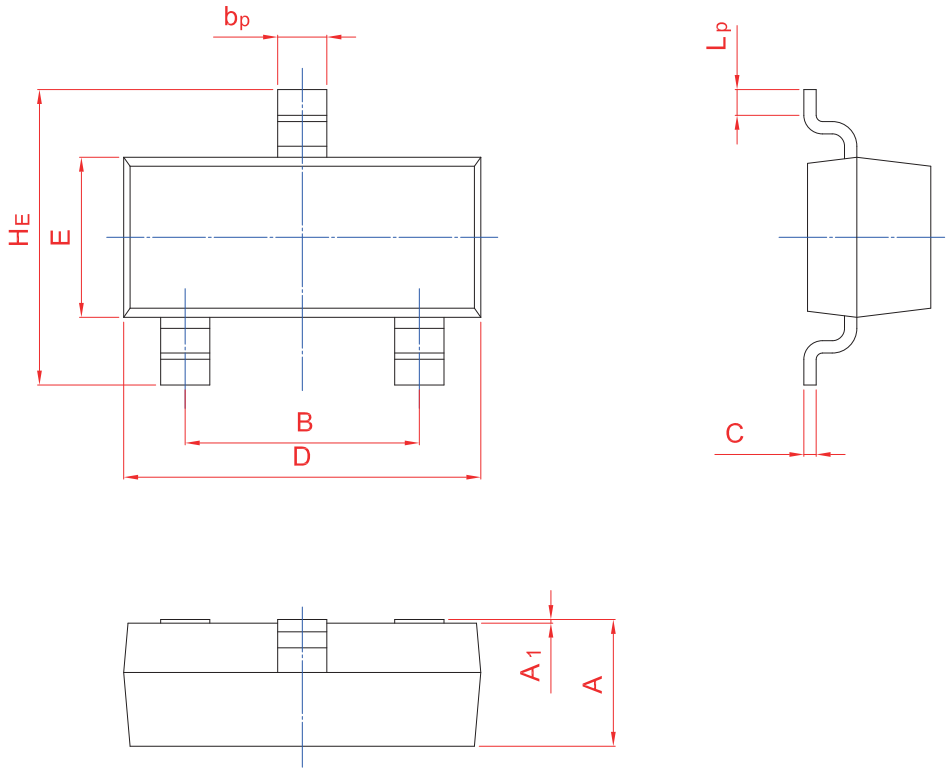


Fig.4 Output Voltage vs. Output Current



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20