

DTA143XCA

DIGITAL TRANSISTOR (PNP)

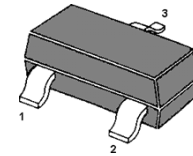
FEATURES

- 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 positive 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

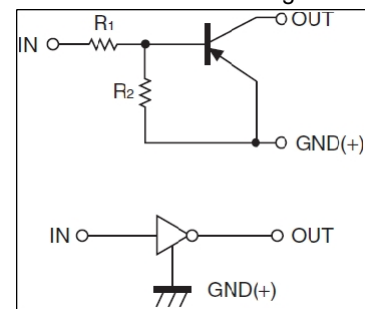
MARKING:X33

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply voltage	---	-50	---	V
V_{IN}	Input voltage	-20	---	7	V
I_O $I_{C(MAX)}$	Output current	---	-100 -100	---	
P_d	Power dissipation	---	200	---	mW
T_j	Junction temperature	---	150	---	°C
T_{stg}	Storage temperature	-55	---	150	°C



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



Equivalent Circuit

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	-0.3			V	$V_{CC}=-5V, I_O=-100\mu A$
	$V_{I(on)}$			-2.5		$V_O=-0.3V, I_O=-20\text{ mA}$
Output voltage	$V_{O(on)}$		-0.1	-0.3	V	$I_O/I_I=-10\text{mA}/-0.5\text{mA}$
Input current	I_I			-1.8	mA	$V_I=-5V$
Output current	$I_{O(off)}$			-0.5	μA	$V_{CC}=-50V, V_I=0$
DC current gain	G_I	30				$V_O=-5V, I_O=-10\text{mA}$
Input resistance	R_1	3.29	4.7	6.11	K Ω	
Resistance ratio	R_2/R_1	1.7	2.1	2.6		
Transition frequency	f_T		250		MHz	$V_O=-10V, I_O=5\text{mA}, f=100\text{MHz}$

Typical Characteristics

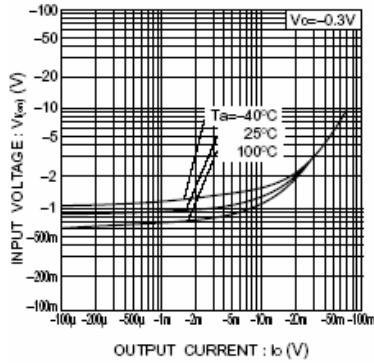


Fig.1 Input voltage vs. output current
(ON characteristics)

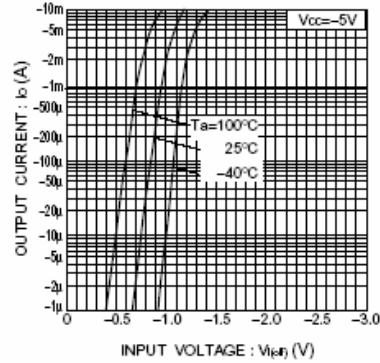


Fig.2 Output current vs. input voltage
(OFF characteristics)

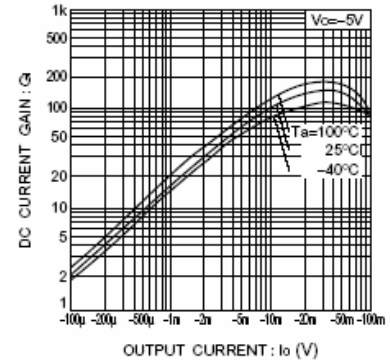


Fig.3 DC current gain vs. output
current

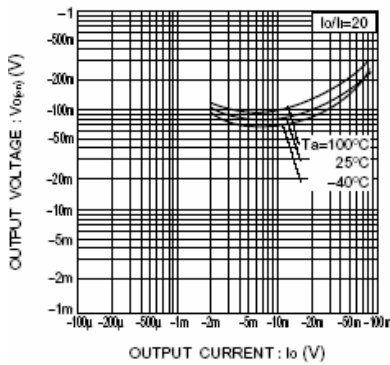
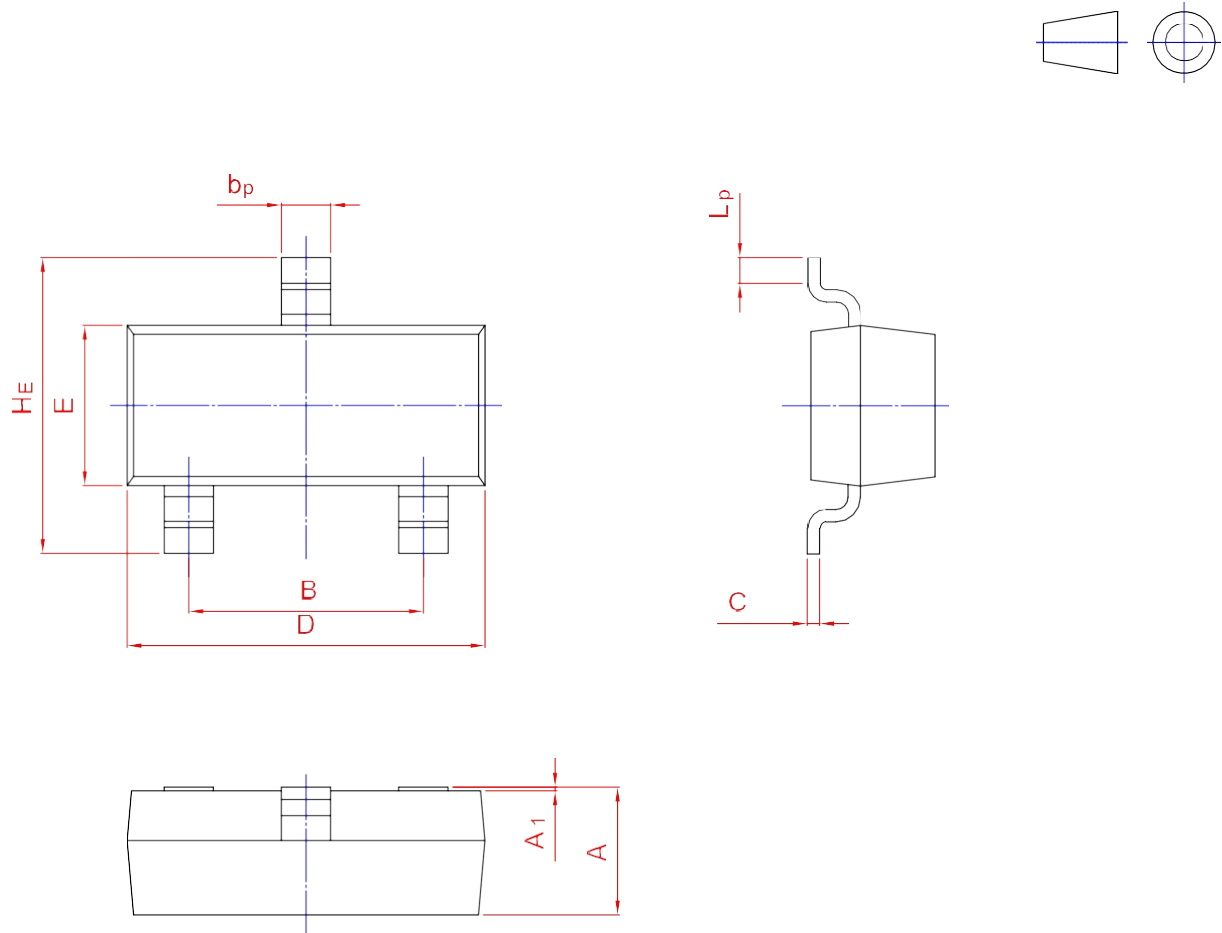


Fig.4 Output voltage vs. output
current

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