YEA SHIN TECHNOLOGY CO., LTD

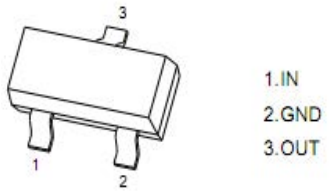
DTA123JCA

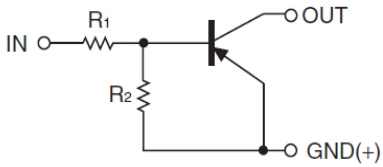
PNP Digital Transistors (Built-in Resistors)

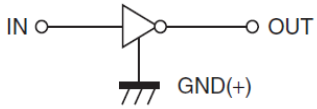
Features

- 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.

SOT-23 Pin Configuration







DEVICE MARKING AND RESISTOR VALUES

Device	Marking	R1 (K)	R2 (K)	Shipping
DTA123JCA	E32	2.2	47	3000/Tape & Reel

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Symbol	Parameter	Limits	Unit
V_{CC}	Supply Voltage	-50	V
V_{IN}	Input Voltage	-12～+5	V
I_O	Output Current	-100	mA
P_D	Power Dissipation	150	mW
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

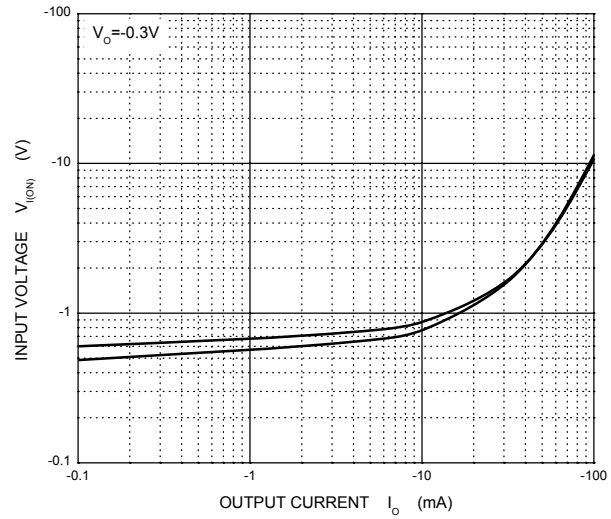
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=-5V,I_O=-100μA	-0.5			V
	$V_{I(on)}$	V_O=-0.3V,I_O=-5 mA			-1.1	V
Output voltage	$V_{O(on)}$	I_O/I_I=-5mA/-0.25mA		-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=-10mA	80			
Input resistance	R_1		1.54	2.2	2.86	kΩ
Resistance ratio	R_2/R_1		17	21	26	
Transition frequency	f_T	V_O=-10V,I_O=-5mA,f=100MHz		250		MHz

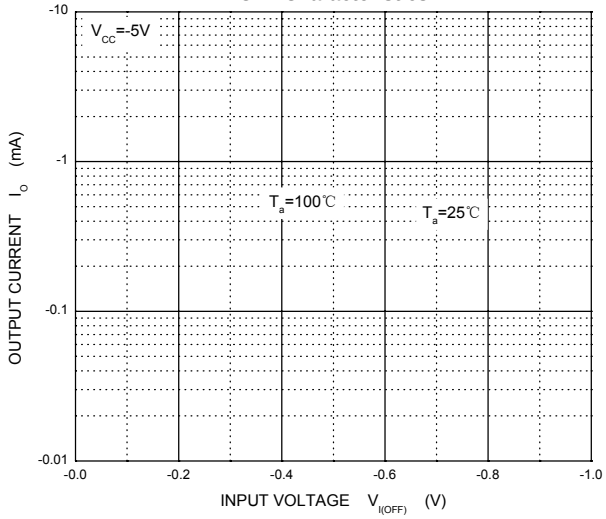
DEVICE CHARACTERISTICS

DTA123JCA

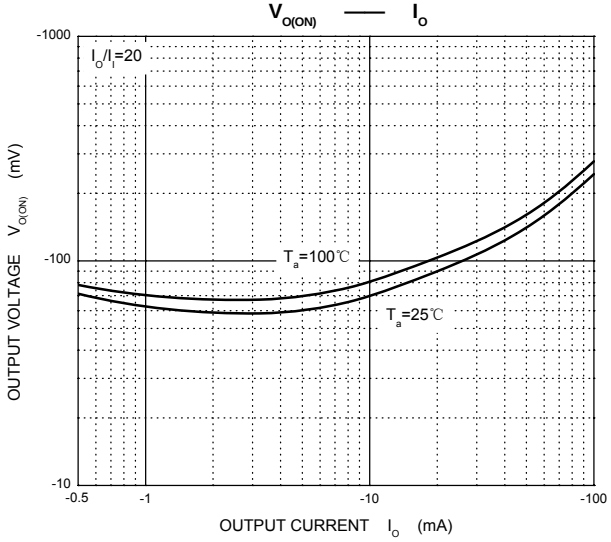
ON Characteristics



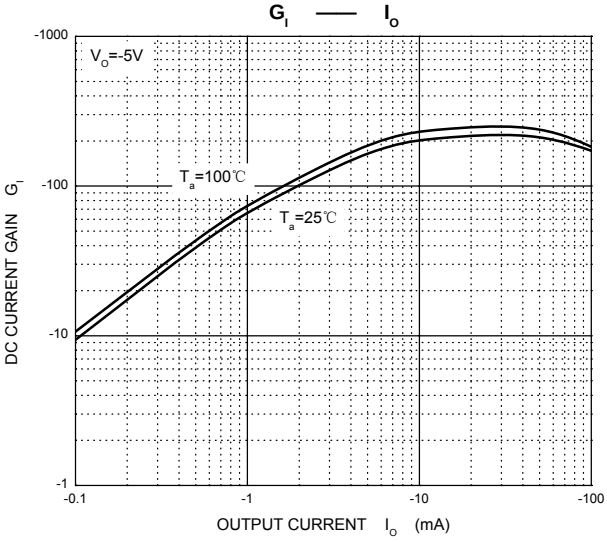
OFF Characteristics



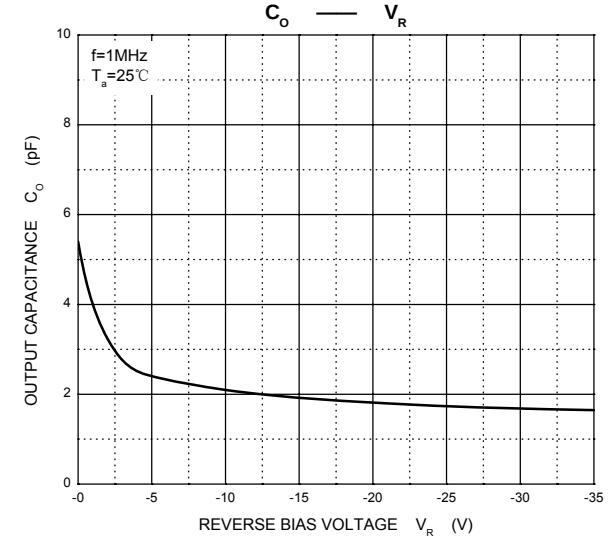
$V_{O(ON)}$ —— I_O



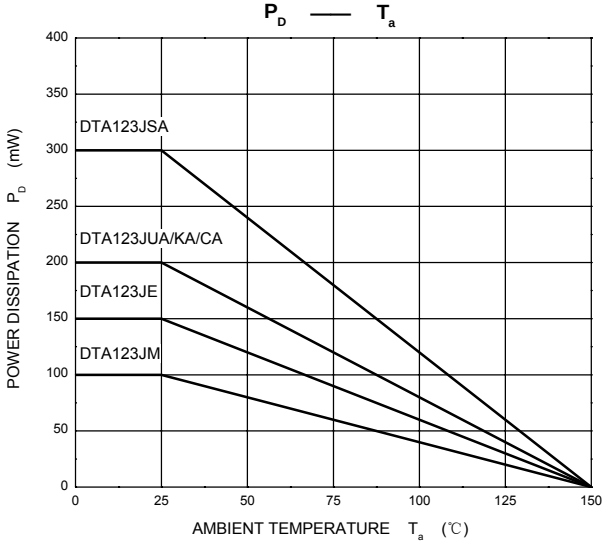
G_I —— I_O



C_O —— V_R



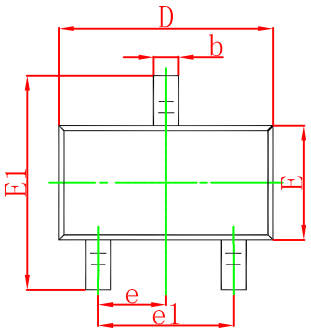
P_D —— T_a

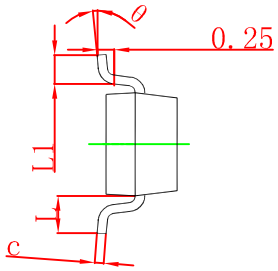


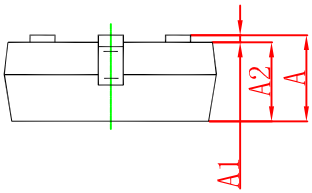
PACKAGE OUTLINE & DIMENSIONS

DTA123JCA

SOT-23 Package Outline Dimensions

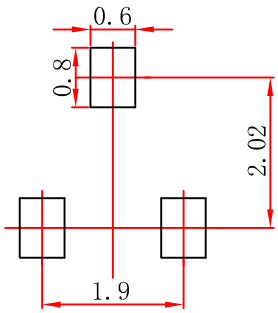






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.