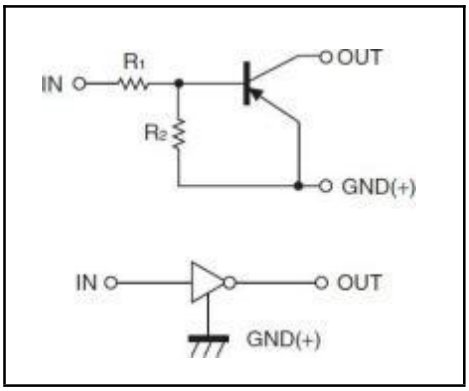
Digital Transistors (Built-in Resistors)

• EquivalentCircuit

DIGITAL TRANSISTOR (PNP)

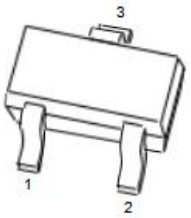


FEATURES

- 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 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

PIN CONNENCTIONS and MARKING

DTA143ZE — **SOT-523**

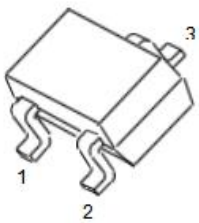


1. IN
2. GND
3.OUT

DTA143ZUA — **SOT-323**

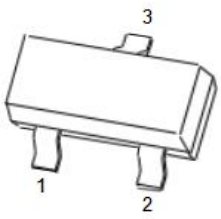
1. IN
2. GND
3. OUT

DTA143ZKA — **SOT-23-3L**



1. IN
2. GND
3.OUT

DTA143ZCA — **SOT-23**



1. IN
2. GND
3. OUT

ORDERING INFORMATION

Part Number	MARKING (1)	Package	Packing Method	Pack Quantity
DTA143ZE	**E13**	SOT-523	Reel	3000pcs/Reel
DTA143ZUA	**E13**	SOT-323	Reel	3000pcs/Reel
DTA143ZKA	**E13**	SOT-23-3L	Reel	3000pcs/Reel
DTA143ZCA	**E13**	SOT-23	Reel	3000pcs/Reel

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

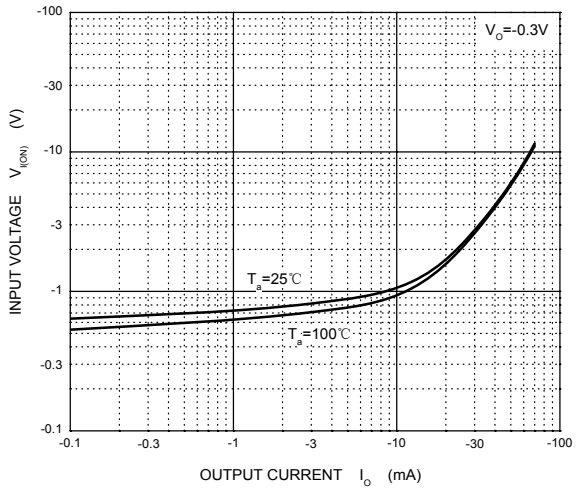
Symbol	Parameter	Limits(DTA143Z□)						Unit
			E	UA	KA	CA		
V_{CC}	Supply Voltage	-50						V
V_{IN}	Input Voltage	-30～+5						V
I_O	Output Current	-100						mA
P_D	Power Dissipation		150	200	200	200		mW
T_j	Junction Temperature	150						℃
T_{stg}	Storage Temperature	-55～+150						℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

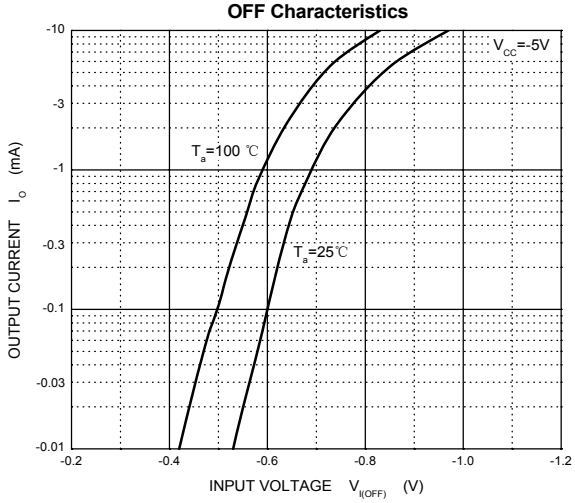
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=-5V,I_O=-100μA	-0.5			V
	$V_{I(on)}$	V_O=-0.3V,I_O=-5mA			-1.3	V
Output voltage	$V_{O(on)}$	I_O/I_I=-5mA/-0.25mA			-0.3	V
Input current	I_I	V_I=-5V			-1.8	mA
Output current	$I_{O(off)}$	V_{CC}=-50V,V_I=0			-0.5	μA
DC current gain	G_I	V_O=-5V,I_O=-10mA	80			
Input resistance	R_1		3.29	4.7	6.11	kΩ
Resistance ratio	R_2/R_1		8	10	12	
Transition frequency	f_T	V_O=-10V,I_O=-5mA,f=100MHz		250		MHz

Typical Characteristics

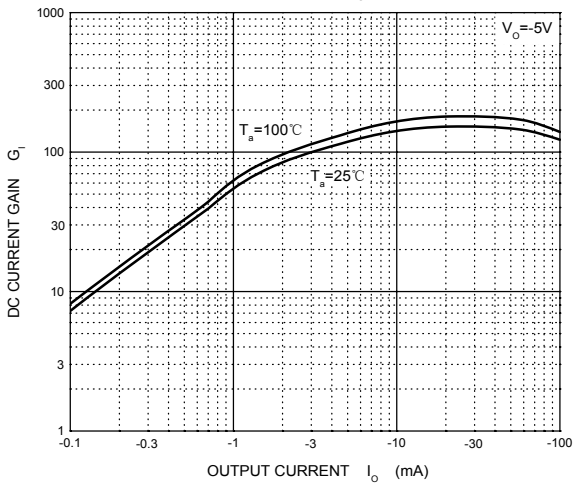
ON Characteristics



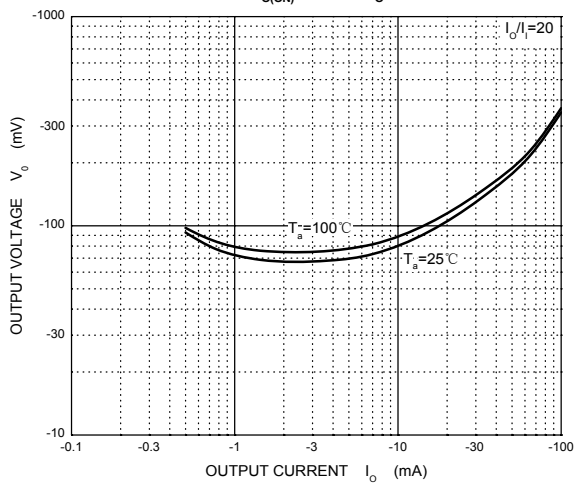
OFF Characteristics



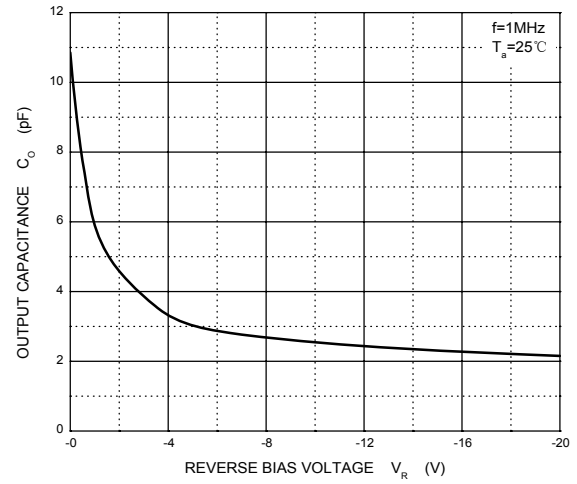
G_I — I_O



$V_{O(ON)}$ — I_O



C_O — V_R



P_D — T_a