

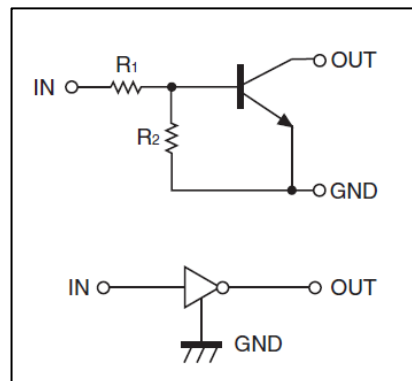
DTC143EUA

DIGITAL TRANSISTOR (NPN)

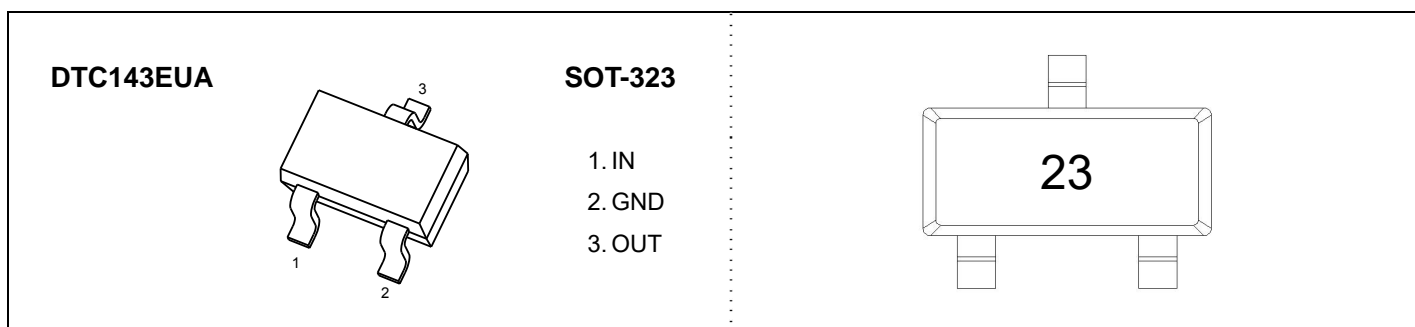
FEATURES

- 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

• Equivalent Circuit



PIN CONNENCTIONS and MARKING



Ordering Information

Part Number	Marking	Packaging	Reel Size
DTC143EUA	23	3000/Tape & Reel	7 inch

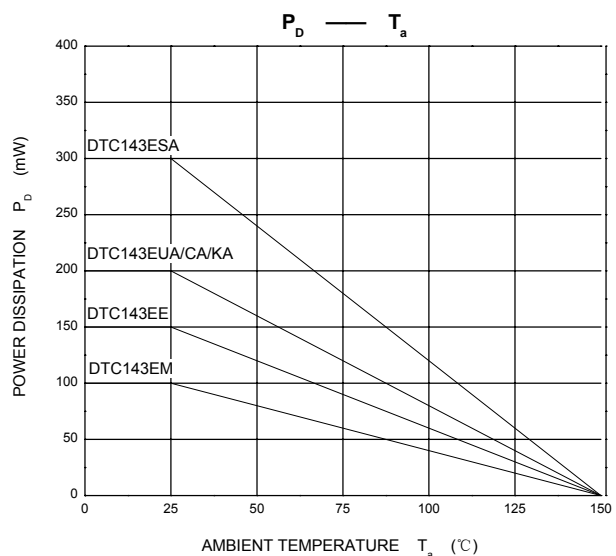
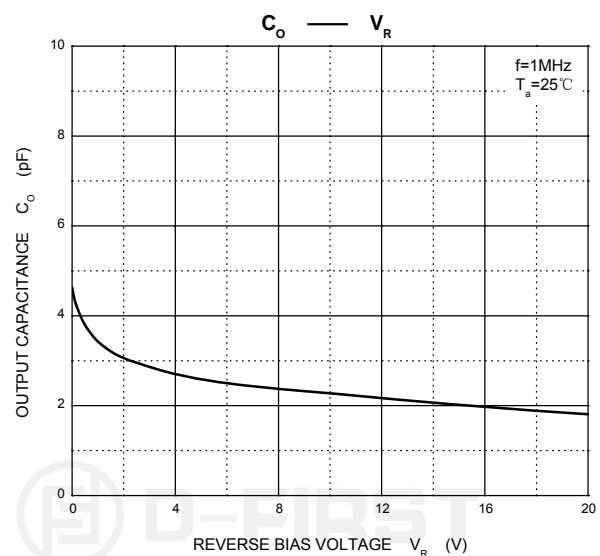
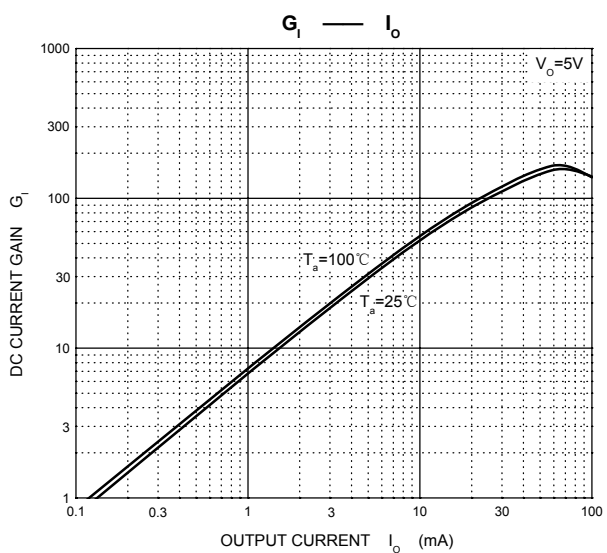
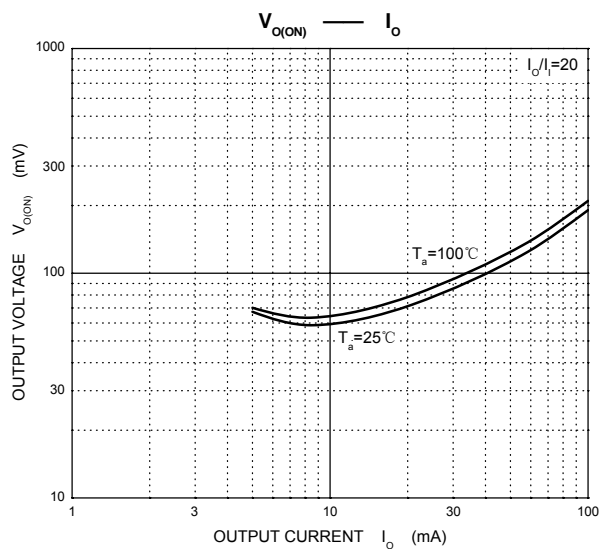
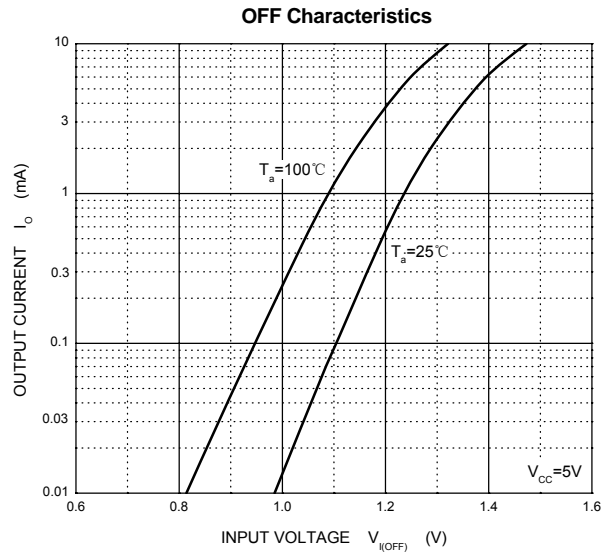
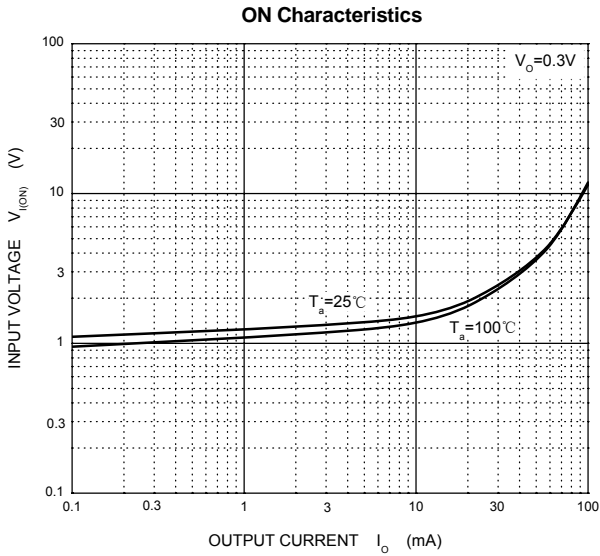
MAXIMUM RATINGS($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	DTC143EUA		Unit
V_{CC}	Supply Voltage	50		V
V_{IN}	Input Voltage	-10~+30		V
I_o	Output Current	100		mA
P_D	Power Dissipation	200		mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150		$^\circ\text{C}$

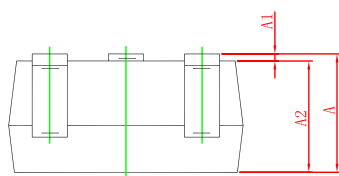
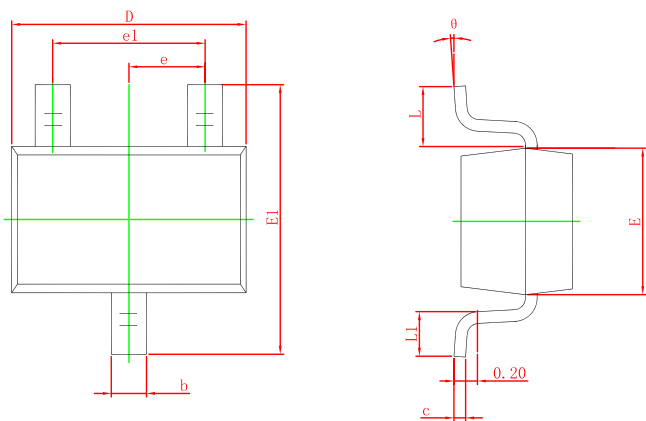
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC}=5V, I_o=100\mu\text{A}$	0.5			V
	$V_{I(on)}$	$V_o=0.3V, I_o=20\text{mA}$			3	V
Output voltage	$V_{O(on)}$	$I_o/I_i=10\text{mA}/0.5\text{mA}$			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	$V_o=5V, I_o=10\text{mA}$	20			
Input resistance	R_1		3.29	4.7	6.11	$\text{k}\Omega$
Resistance ratio	R_2/R_1		0.8	1	1.2	
Transition frequency	f_T	$V_o=10V, I_o=5\text{mA}, f=100\text{MHz}$		250		MHz

Typical Performance Characteristics (TA=25°C unless otherwise Specified)

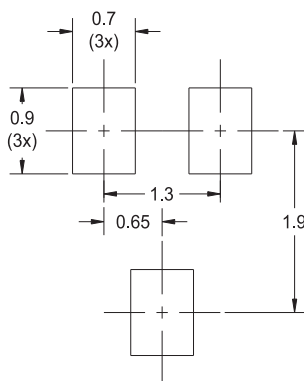


SOT-323 Package Outline Drawing



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Land Pattern



Contact Information

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