

1. 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.

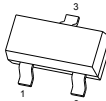
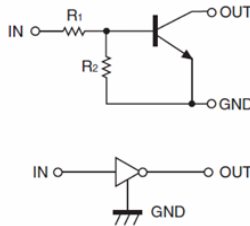
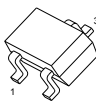
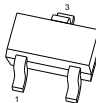
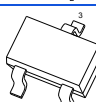
2.MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Limits (DTC143E xx)						Unit
		M	E	UA	CA	KA	SA	
Supply Voltage	V _{CC}	50						V
Input Voltage	V _{IN}	-10~+30						V
Output Current	I _O	100						mA
Power Dissipation	P _D	100	150	200	200	200	300	mW
Operation Junction and Storage Temperature Range	T _J , T _{stg}	-55~+150						℃

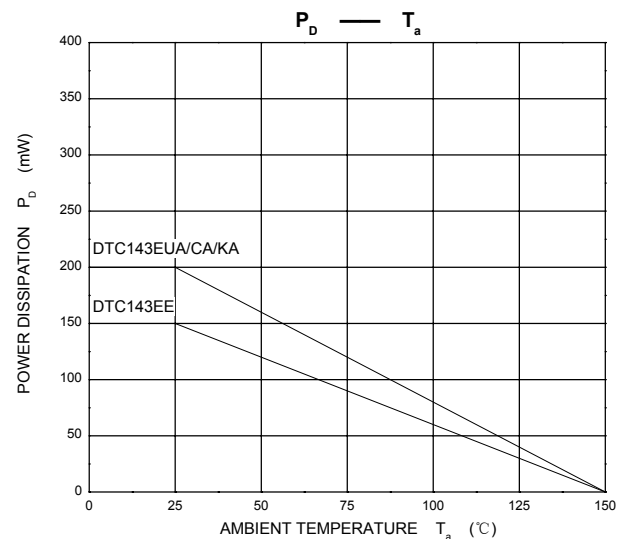
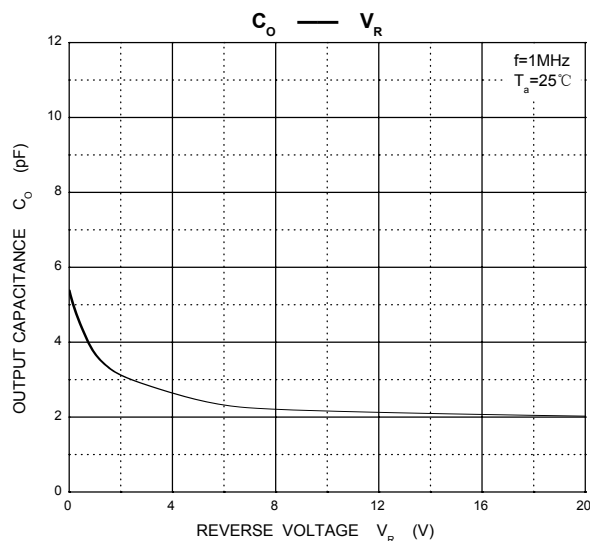
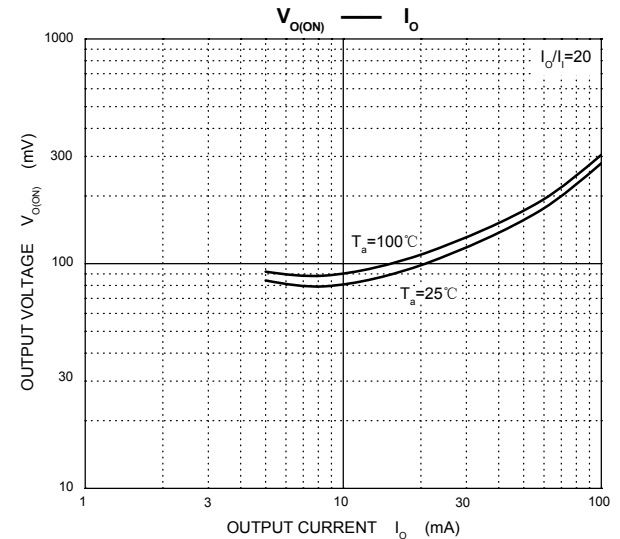
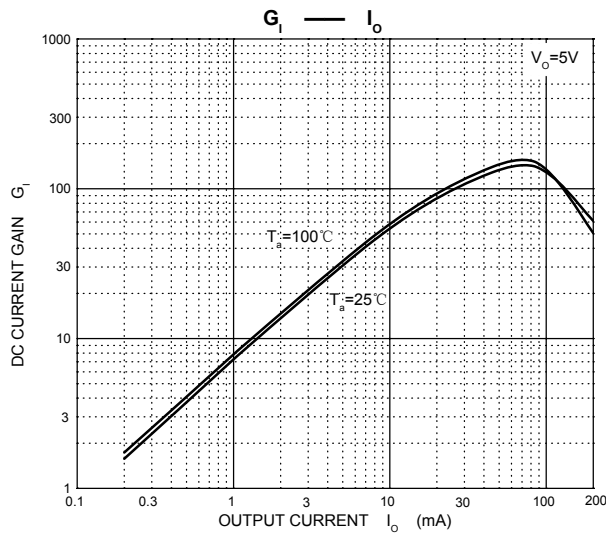
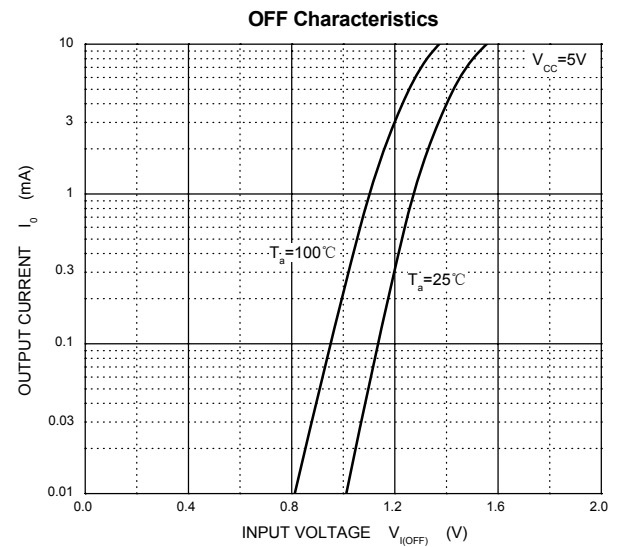
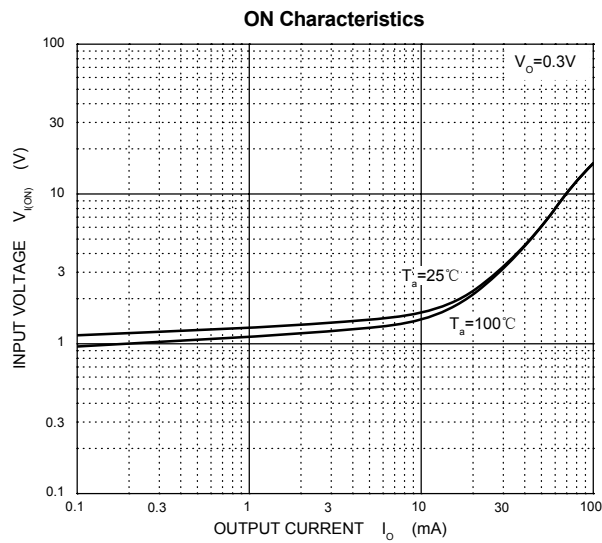
3. Electrical Characteristics (Ta=25℃ unless otherwise specified)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
R ₁	Input resistance		3.29	4.7	6.11	kΩ
R ₂ /R ₁	Resistance ratio		0.8	1	1.2	
V _{O(on)}	Output voltage	I _O /I _I =10mA/0.5mA	—	—	0.3	V
I _I	Input current	V _I =5V	—	—	1.8	mA
I _{O(off)}	Output current	V _{CC} =50V, V _I =0	—	—	0.5	μA
G ₁	DC current gain	V _O =5V, I _O =10mA	30	—	—	
V _{I(off)}	Input voltage	V _{CC} =5V, I _O =100μA	0.5	—	—	V
V _{I(on)}		V _O =0.3V, I _O =20mA	—	—	3	V
f _T	Transition frequency	V _O =10V, I _O =5mA , f=100MHz	—	250	—	MHz

4. Pinning information

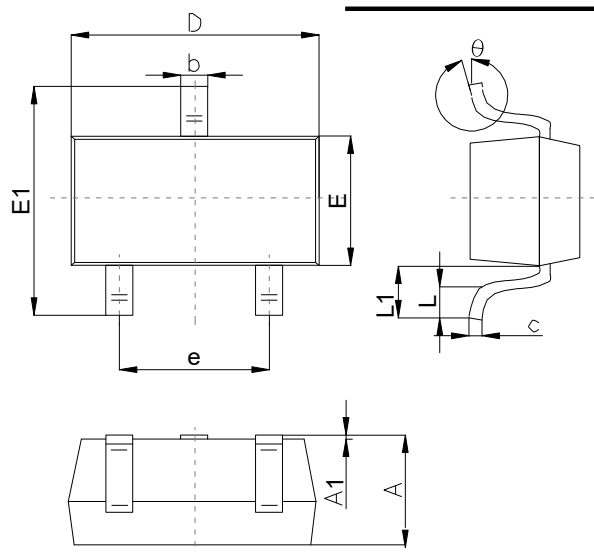
Pin	symbol	Part Number	Simplified outline	Equivalent Circuit	Marking	Package		
1	IN	DTC143ECA			23	SOT-23		
2	GND				DTC143EKA		23	SOT-23-3
3	OUT						DTC143EE	
1	IN	DTC143EUA						
2	GND							
3	OUT							

5.Electrical Characteristics Diagrams



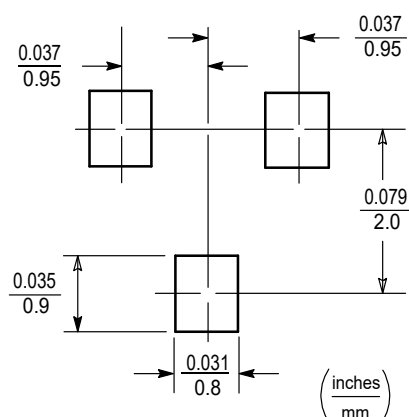
6 . Outline Drawing

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	0.65		1.40
A1	0.00		0.20
b	0.30		0.55
c	0.08		0.20
D	2.70		3.10
E	1.15		1.65
E1	2.10		2.80
e	1.70		2.10
L	0.15		0.50
L1	0.35		0.70
θ	0°		12°

7 . Suggested Pad Layout



Note:

1. Controlling dimension:in/millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

8. Important Notice and Disclaimer

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