Elektronische Bauelemente

DTC143EM/DTC143EE/DTC143EUA
DTC143ECA/DTC143ESA

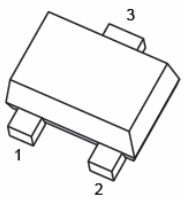
NPN Digital Transistors (Built-in Resistors)

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

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.

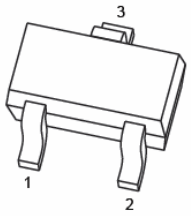
DTC143EM (SOT-723)



1. IN
2. GND
3. OUT

MARKING：23

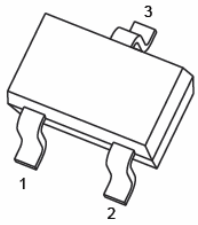
DTC143EE (SOT-523)



1. IN
2. GND
3. OUT

MARKING：23

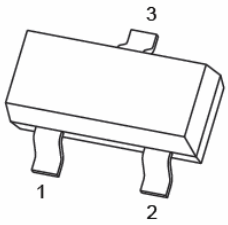
DTC143EUA (SOT-323)



1. IN
2. GND
3. OUT

MARKING：23

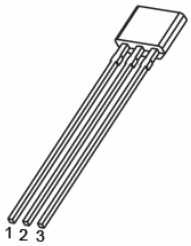
DTC143ECA (SOT-23)



1. IN
2. GND
3. OUT

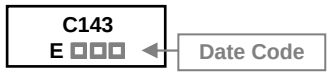
MARKING：23

DTC143ESA (TO-92S)

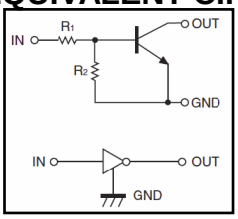


1. GND
2. OUT
3. IN

MARKING：



EQUIVALENT CIRCUIT



ORDER INFORMATION

Part Number	Type
DTC143EM DTC143EE DTC143EUA DTC143ECA DTC143ESA	Lead (Pb)-free
DTC143EM-C DTC143EE-C DTC143EUA-C DTC143ECA-C DTC143ESA-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

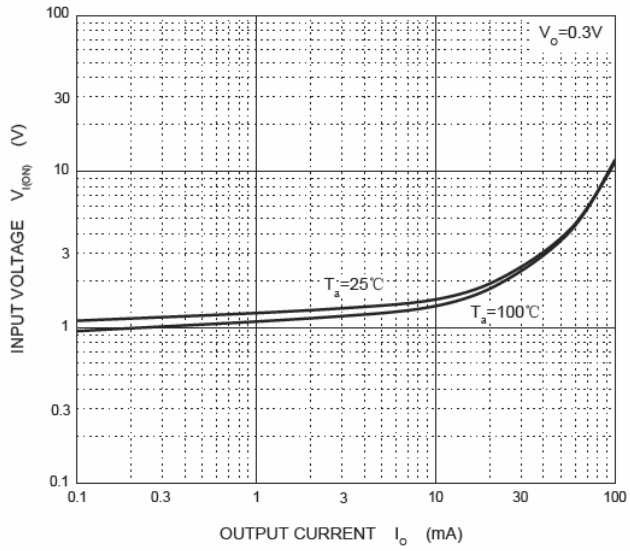
Parameter	Symbol	Limits (DTC143E□)					Unit
		M	E	UA	CA	SA	
Supply Voltage	V_{CC}	50					V
Input Voltage	V_{IN}	-10~30					V
Output Current	I_O	100					mA
Power Dissipation	P_D	100	150	200		300	mW
Junction & Storage Temperature	T_J, T_{STG}	-55~150					℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

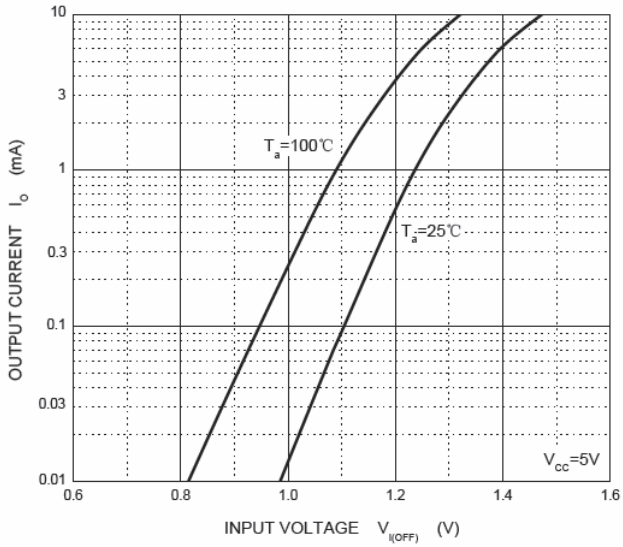
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Input Voltage	$V_{I(off)}$	-	-	0.5	V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$	3	-	-		V_O=0.3V, I_O=20mA
Output Voltage	$V_{O(on)}$	-	-	0.3	V	I_O/I_I=10mA/0.5mA
Input Current	I_I	-	-	1.8	mA	V_I=5V
Output Current	$I_{O(off)}$	-	-	0.5	μA	V_{CC}=50V, V_I=0
DC Current Gain	G_I	20	-	-		V_O=5V, I_O=10mA
Input Resistance	R_1	3.29	4.7	6.11	KΩ	
Resistance Ratio	R_2/R_1	0.8	1	1.2		
Transition Frequency	f_T	-	250	-	MHz	V_O=10V, I_O=5mA, f=100MHz

CHARACTERISTIC CURVES

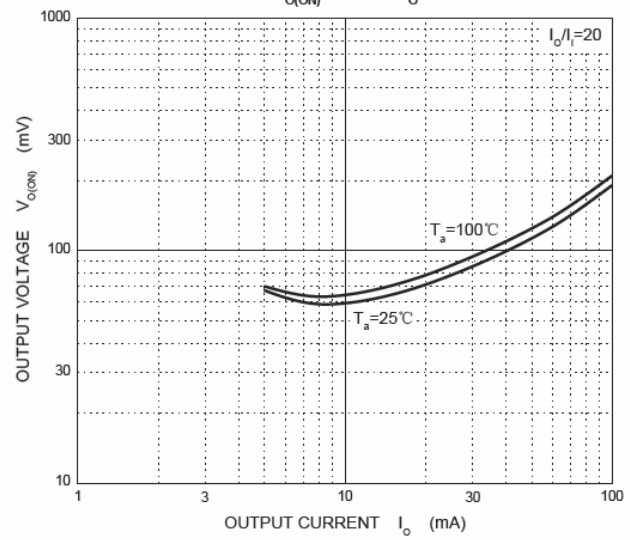
ON Characteristics



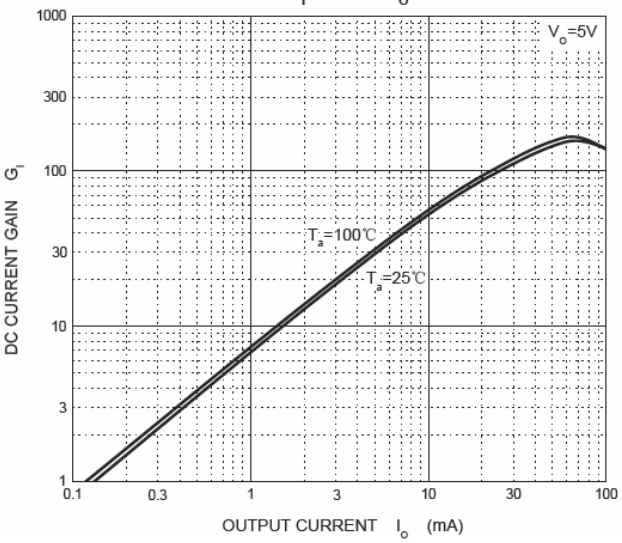
OFF Characteristics



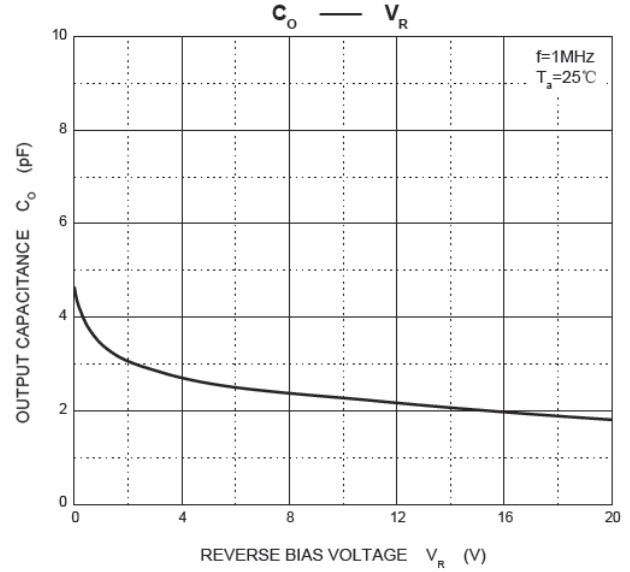
$V_{O(ON)}$ — I_O



G_I — I_O



C_O — V_R



P_D — T_a