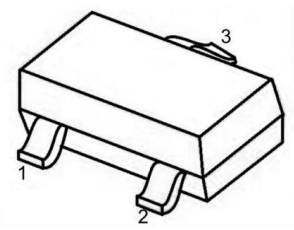
DTC114ECA
Digital Transistor

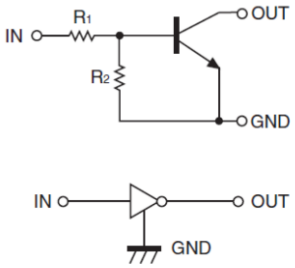
DTC114ECA Digital Transistor(NPN)

SOT-23



1.IN 2.GND 3.OUT

Schematic diagram



Feature

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- 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

Marking: 24

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

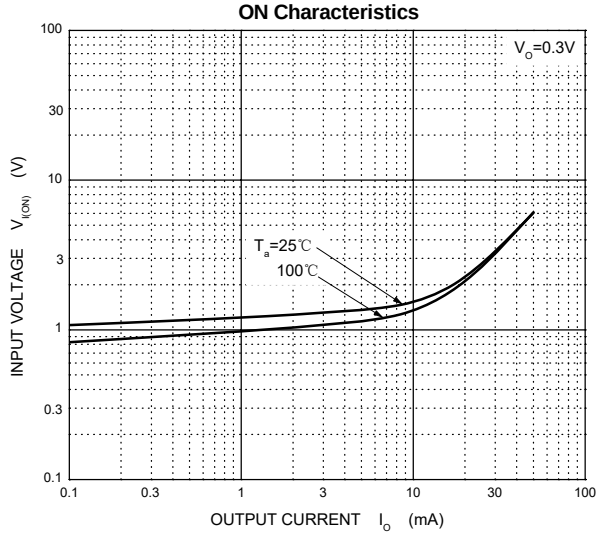
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~+40	V
Output Current	I_O	50	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	125	℃
Storage Temperature Range	T_{STG}	-55 ~ +150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise noted)

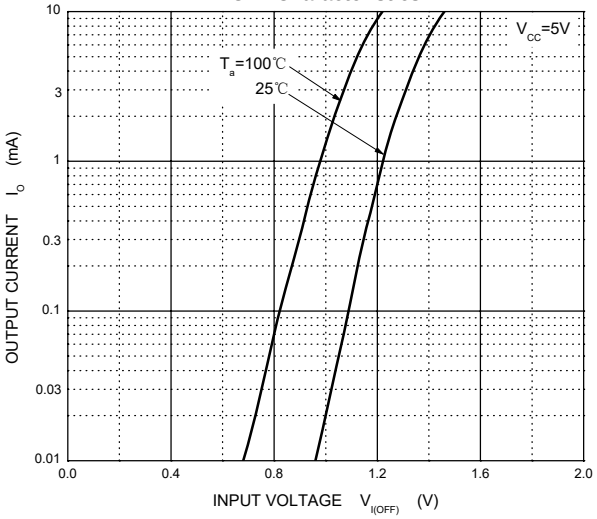
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V , I_O=100μA	0.5			V
	$V_{I(on)}$	V_O=0.3V , I_O=10mA			3	V
Output voltage	$V_{O(on)}$	I_O=10mA ,I_I=0.5mA		0.1	0.3	V
Input current	I_I	V_I =5V			0.88	mA
Output current	$I_{O(off)}$	V_{CC}=50V , V_I=0V			0.5	μA
DC current gain	G_I	V_O=5V ,I_O =5mA	30			
Input resistance	R_1		7	10	13	kΩ
Resistance ratio	R_2/ R_1		0.8	1	1.2	
Transition frequency	f_T	V_O=10V,I_O=5mA,f=1MHz		250		MHz

Typical Characteristics

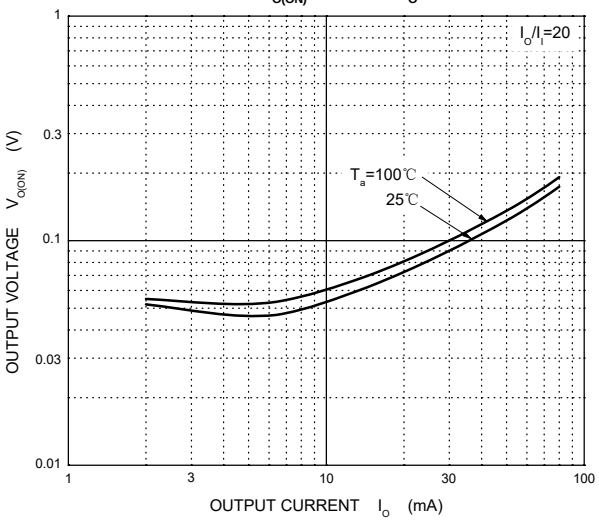
ON Characteristics



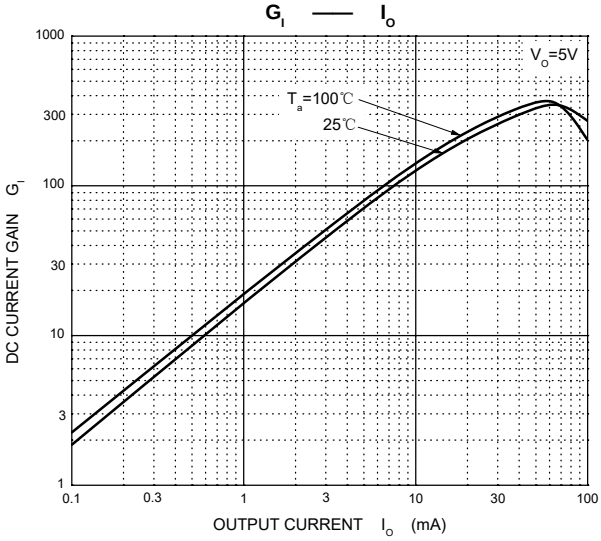
OFF Characteristics



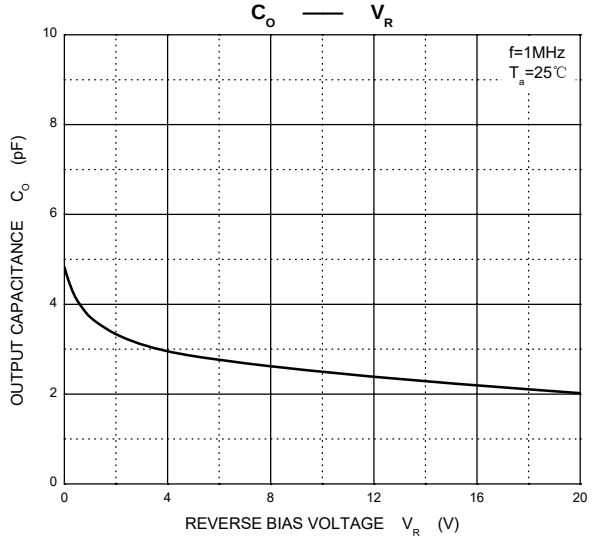
$V_{O(ON)}$ — I_O



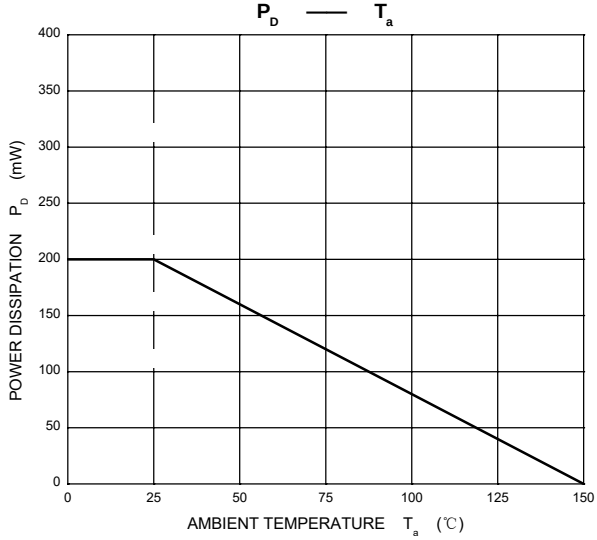
G_I — I_O



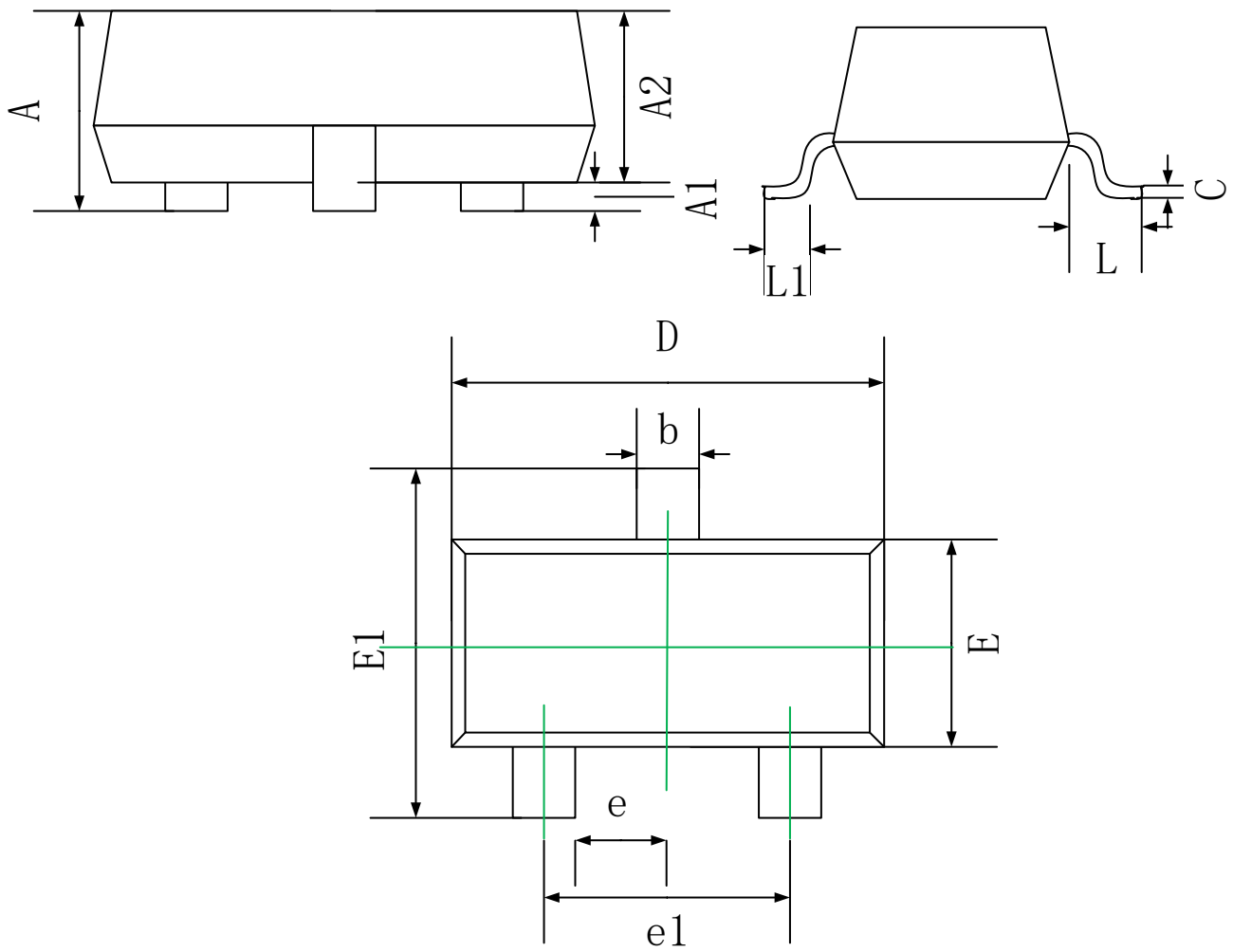
C_O — V_R



P_D — T_a



SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50