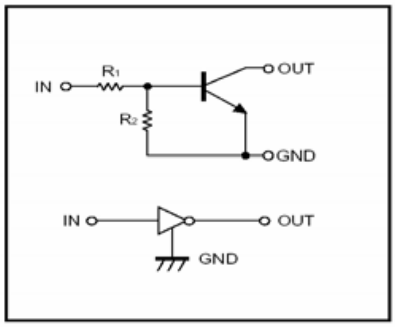
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

Digital transistors (built-in resistors)

DTC124EE/DTC124EUA/DTC124ECA
DTC124EKA/DTC124ESA

DIGITAL TRANSISTOR (NPN)

●Equivalent circuit

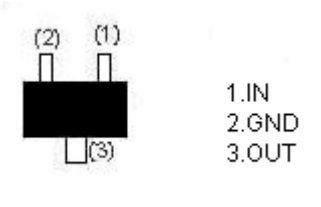


FEATURES

- 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

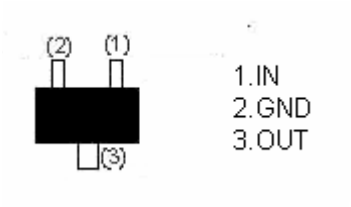
PIN CONNENCTIONS AND MARKING

DTC124EE



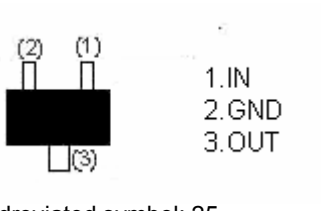
SOT-523 Addreviated symbol: 25

DTC124EUA



SOT-323 Addreviated symbol: 25

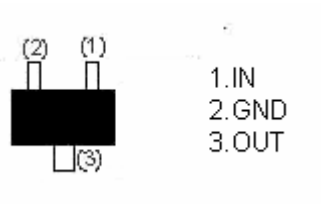
DTC124EKA



SOT-23-3L

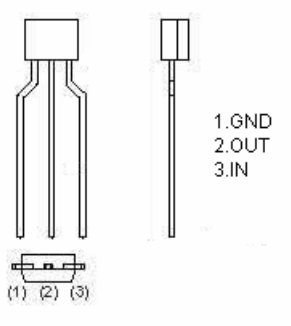
Addreviated symbol: 25

DTC124ECA



SOT-23 Addreviated symbol: 25

DTC124ESA



TO-92S

B,Jul,2011

Absolute maximum ratings(Ta=25℃)

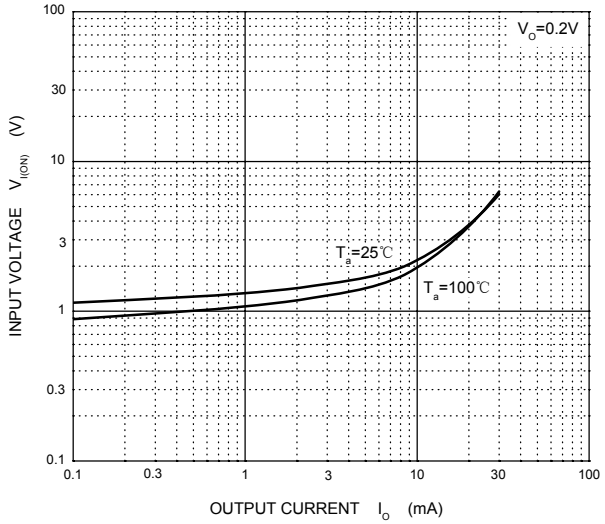
Parameter	Symbol	Limits (DTC124E)					Unit
		E	UA	KA	CA	SA	
Supply voltage	V_{CC}	50					V
Input voltage	V_{IN}	-10~40					V
Output current	I_O	30					mA
	$I_{C(MAX)}$	100					
Power dissipation	P_d	150	200			300	mW
Junction temperature	T_j	150					℃
Storage temperature	T_{stg}	-55~150					℃

Electrical characteristics (Ta=25℃)

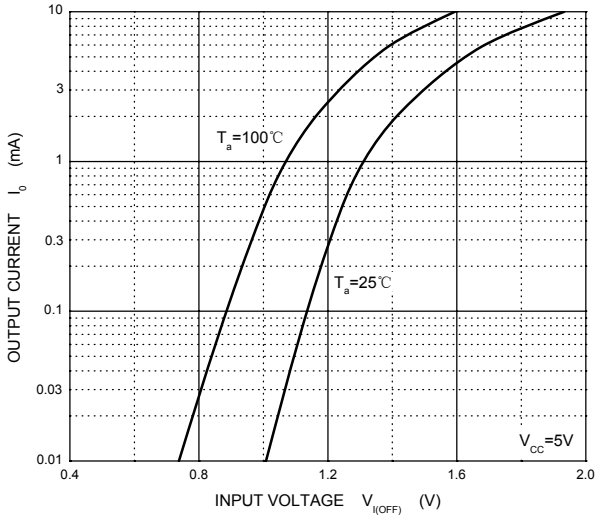
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$			3		V_O=0.2V, I_O=5 mA
Output voltage	$V_{O(on)}$		0.1	0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.36	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	56				V_O=5V, I_O=5mA
Input resistance	R_1	15.4	22	28.6	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

Typical Characteristics DTC124EUA

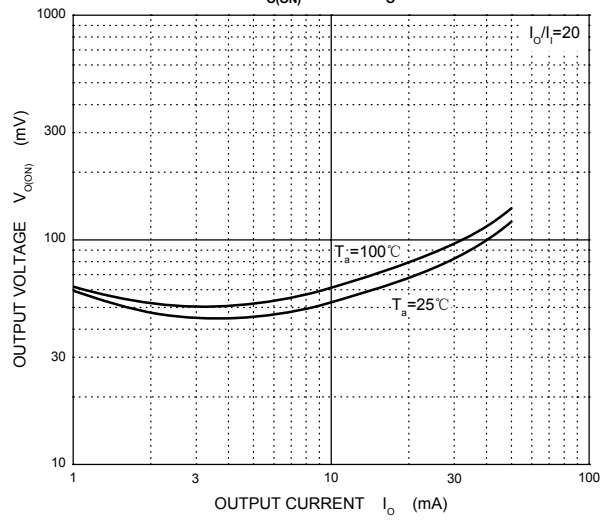
ON Characteristics



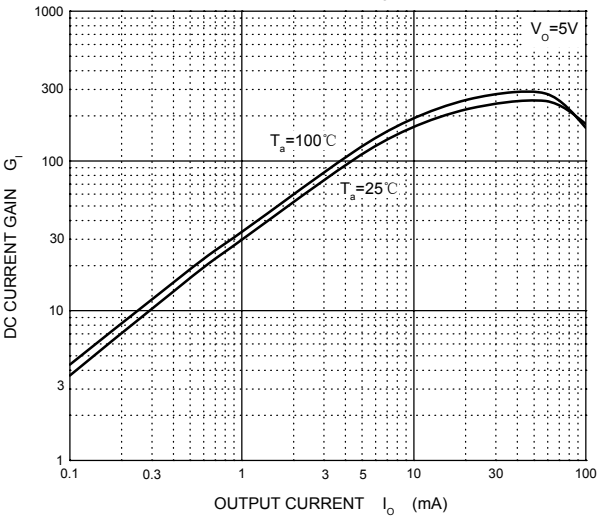
OFF Characteristics



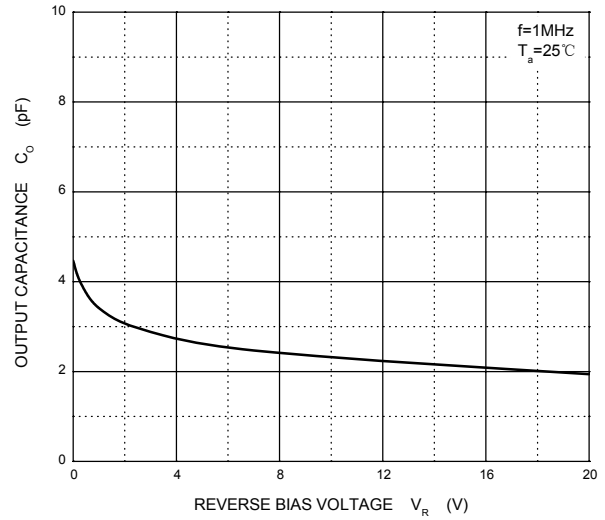
$V_{O(ON)}$ —— I_O



G_I —— I_O



C_O —— V_R



P_D —— T_a