



DTC124E

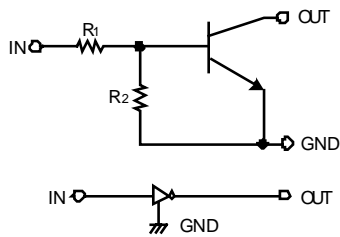
NPN EPITAXIAL SILICON TRANSISTOR

NPN DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

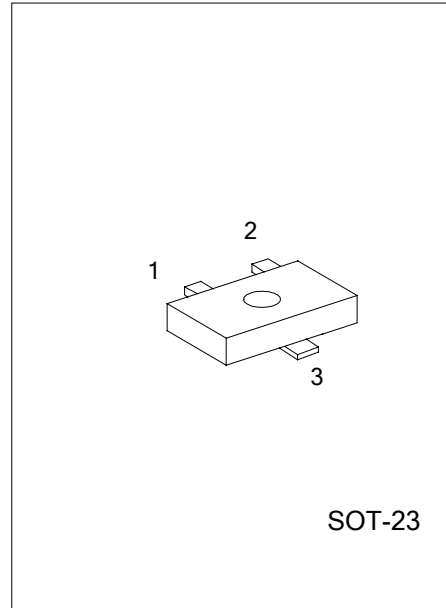
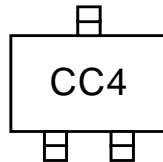
■ FEATURES

- *Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see the equivalent circuit).
- *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.

■ EQUIVALENT CIRCUIT



■ MARKING



*Pb-free plating product number:DTC124EL

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	GND
2	IN
3	OUT

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
DTC124E-AE3-R	DTC124EL-AE3-R	SOT-23	Tape Reel

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

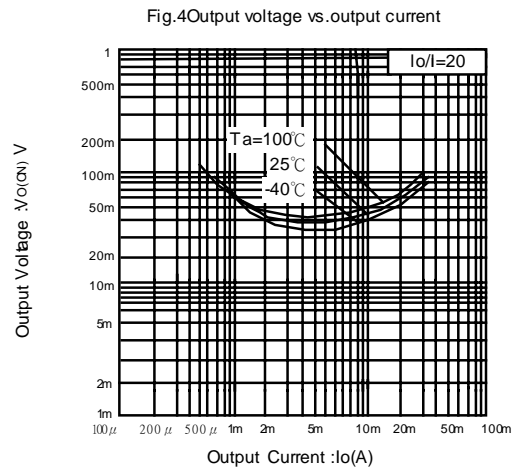
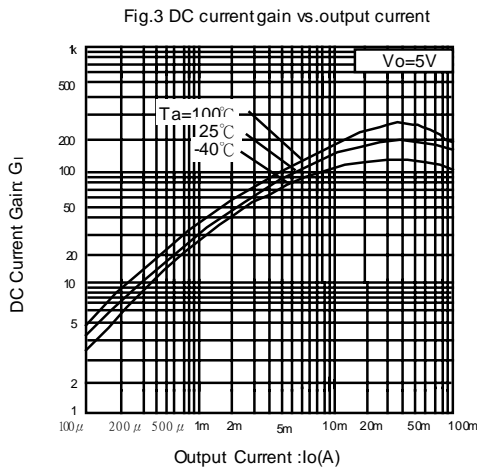
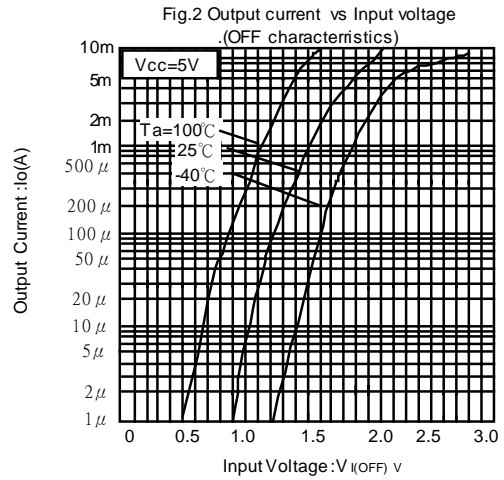
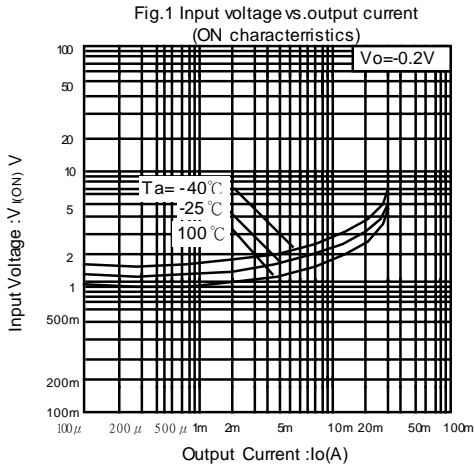
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-10 ~ +40	V
Output Current	I _C	100	mA
	I _O	30	
Power Dissipation	P _D	200	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

■ ELECTRICAL CHARACTERISTICS (Ta= 25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(off)}	V _{CC} = 5V, I _{OUT} =100 μA			0.5	V
	V _{I(ON)}	V _{OUT} = 0.2V, I _{OUT} = 5mA	3			
Output Voltage	V _{O(ON)}	I _{OUT} /I _{IN} = 10mA / 0.5 mA		0.1	0.3	V
Input Current	I _I	V _{IN} = 5V			0.36	mA
Output Current	I _{O(off)}	V _{CC} = 50V, V _{IN} =0V			0.5	μA
DC Current Gain	G _I	V _{OUT} = 5V, I _{OUT} = 5mA	56			
Input Resistance	R _I		15.4	22	28.6	kΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	
Transition Frequency	f _T	V _{CE} = 10 V, I _E = -5mA, f=100MHz *		250		MHz

*Transition frequency of the device

■ TYPICAL CHARACTERISTICS



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