

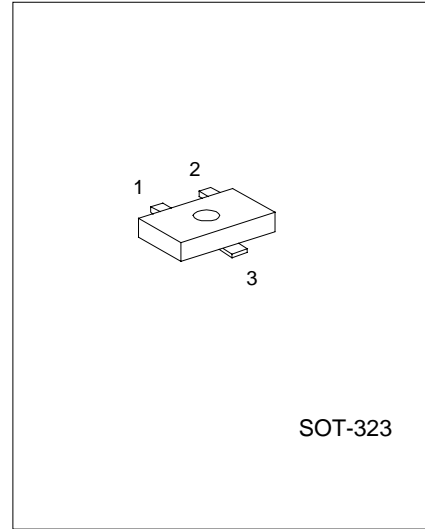


DTC143E *NPN EPITAXIAL SILICON TRANSISTOR*

NPN DIGITAL TRANSISTOR (BUILT-IN RESISTORS)

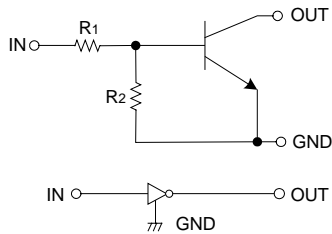
■ FEATURES

- *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.

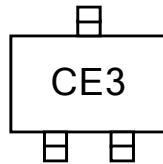


SOT-323

■ EQUIVALENT CIRCUIT



■ MARKING



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*Pb-free plating product number:DTC143EL

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	GND
2	IN
3	OUT

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
DTC143E-AL3-R	DTC143EL-AL3-R	SOT-323	Tape Reel

DTC143E

NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-10 ~ +30	V
Output Current	I _C	100	mA
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 _O =100 μA			0.5	V
	V _{I(ON)}	V _O = 0.3V, I _O = 20mA	3			
Output Voltage	V _{O(ON)}	I _O /I _I = 10mA / 0.5 mA		0.1	0.3	V
Input Current	I _I	V _I = 5V			1.8	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 = 10mA	20			
Input Resistance	R _I		3.29	4.7	6.11	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

Fig.1 Input voltage vs.output current (ON characteristics)

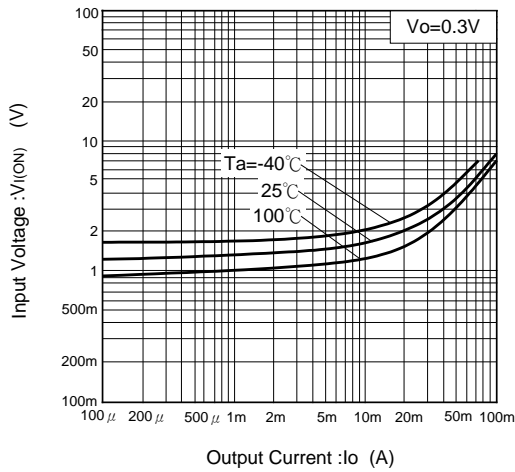


Fig.2 Output current vs Input voltage (OFF characteristics)

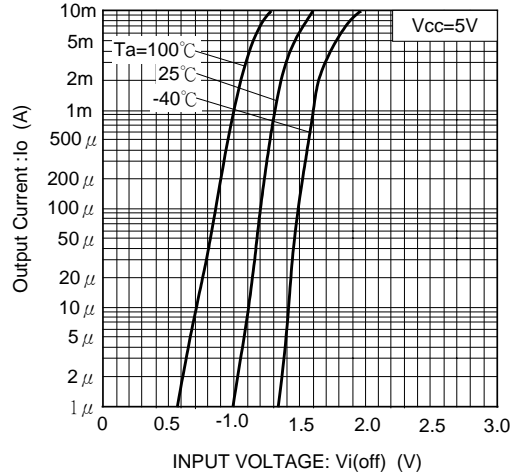


Fig.3 DC current gain vs.output current

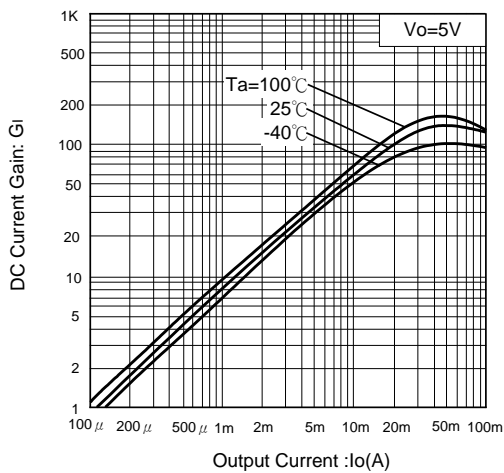
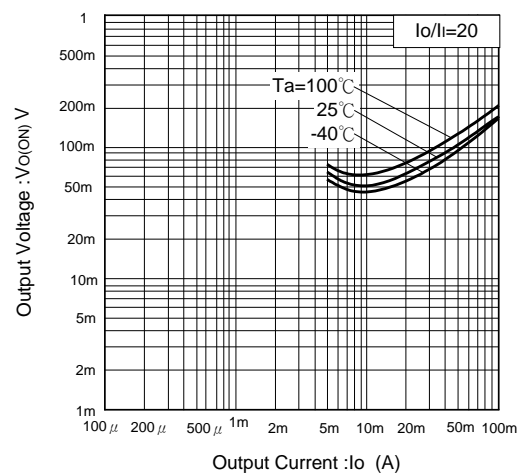


Fig.4 Output voltage vs. output current



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