Shantou Huashan Electronic Devices Co.,Ltd.

NPN DIGITAL TRANSISTOR

HC143E

APPLICATIONS

Switching Circuit，Interface Circuit.

ABSOLUTE MAXIMUM RATINGS（T_a=25℃）

T_{stg}——Storage Temperature····· -55~150℃

T_j——Junction Temperature·····150℃

P_C——Collector Dissipation·····300mW

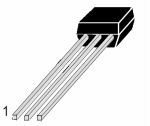
V_{CBO}——Collector-Base Voltage·····50V

V_{CEO}——Collector-Emitter Voltage·····50V

V_{EBO}——Emitter-Base Voltage·····10V

I_C——Collector Current·····100mA

TO-92S



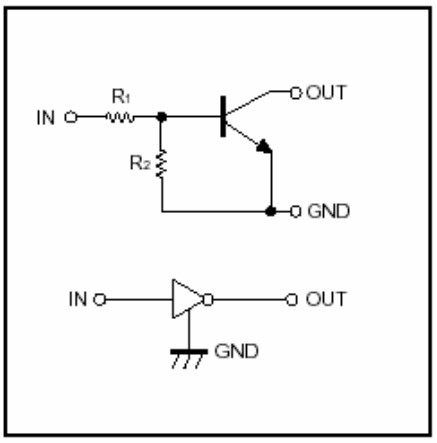
1—Emitter，E
2—Collector,C
3—Base，B

ELECTRICAL CHARACTERISTICS（T_a=25℃）

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{CBO}	Collector-Base Breakdown Voltage	50			V	I_C=10μA, I_E=0
BV_{CEO}	Collector-Emitter Breakdown Voltage	50			V	I_C=0.1mA, I_B=0
I_{CBO}	Collector Cut-off Current			0.1	μA	V_{CB}=40V, I_E=0
I_{CEO}	Collector Cut-off Current			0.5	μA	V_{CE}=40V, I_B=0
I_{EBO}	Emitter Cut-off Current	410	532	760	μA	V_{EB}=5V, I_C=0
H_{FE}	DC Current Gain	50				V_{CE}=5V, I_C=10mA
$V_{CE(sat)}$	Collector- Emitter Saturation Voltage		0.1	0.3	V	I_C=10mA, I_B=0.5mA
VI (off)	Input Off Voltage	0.8	1.1	1.5	V	V_{CE}=5V, I_C=0.1mA
VI (on)	Input On Voltage	1.0	1.9	4.0	V	V_{CE}=0.3V, I_C=20mA
R1	Input Resistor	3.3	4.7	6.1	Kohm	
R2/R1	Resistance Ratio	0.9	1.0	1.1		
fr	Current Gain-Bandwidth Product		250		MHz	V_{CE}=10V,I_C=5mA
Cob	Output Capacitance		3.7		pF	V_{CB}=10V,f=1MHz

HC143E

●Equivalent circuit



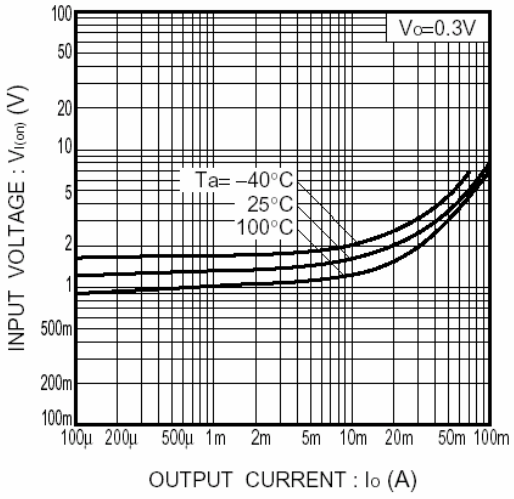


Fig.1 Input voltage vs. output current (ON characteristics)

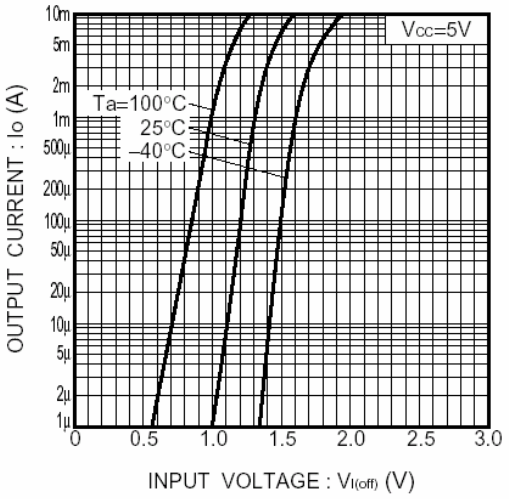


Fig.2 Output current vs. input voltage (OFF characteristics)

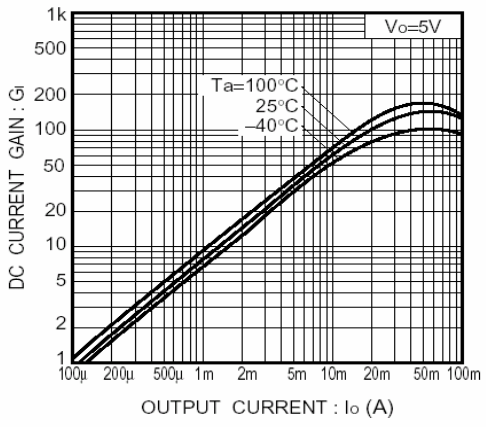


Fig.3 DC current gain vs. output current

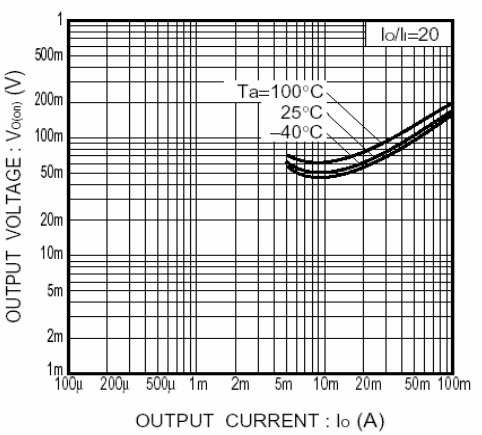


Fig.4 Output voltage vs. output current