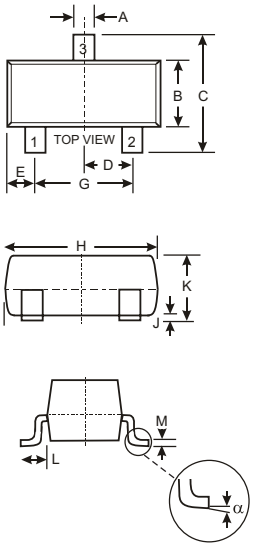
HAICHUANG SEMI

DTC114YCA

NPN SILICON EPITAXIAL PLANAR DIGITAL TRANSISTOR

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
- Marking Code:64

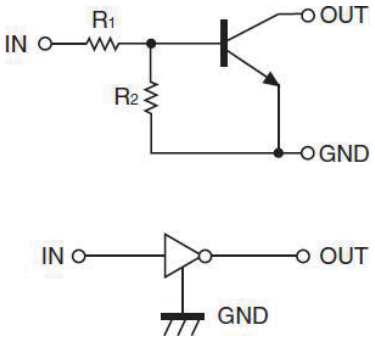


SOT-23		
Dim	**Min**	**Max**
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Symbol	Parameter	Limits	Unit
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-6～+40	V
I_O	Output Current	70	mA
I_{CM}	Peak Collector Current	100	mA
P_D	Power Dissipation	200	mW
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

Equivalent Circuit



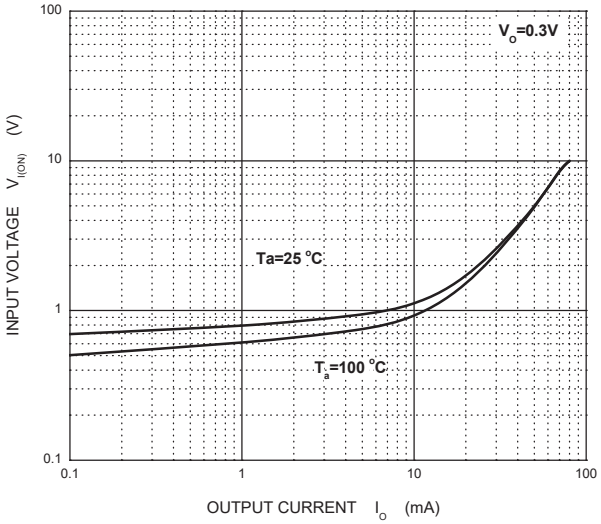
1. IN
2. GND
3. OUT

Electrical Characteristics @ T_A = 25°C unless otherwise specified

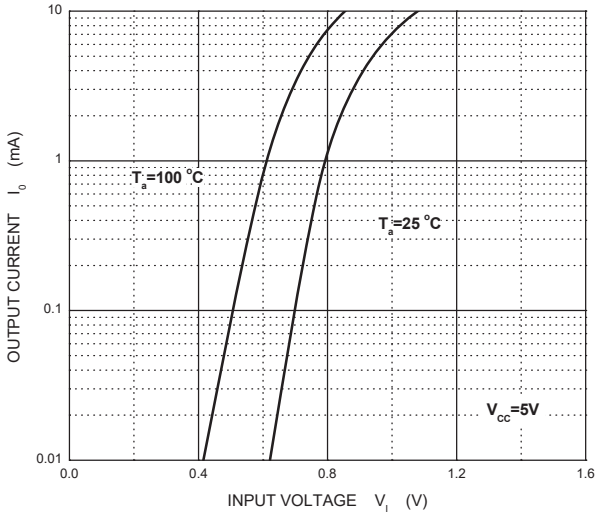
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V,I_O=100μA	0.3			V
	$V_{I(on)}$	V_O=0.3V,I_O=1mA			1.4	V
Output voltage	$V_{O(on)}$	I_O/I_I=5mA/0.25mA			0.3	V
Input current	I_I	V_I=5V			0.88	mA
Output current	$I_{O(off)}$	V_{CC}=50V,V_I=0			0.5	μA
DC current gain	G_I	V_O=5V,I_O=5mA	68			
Input resistance	R_1		7	10	13	kΩ
Resistance ratio	R_2/R_1		3.7	4.7	5.7	
Transition frequency	f_T	V_O=10V,I_O=5mA,f=100MHz		250		MHz

TYPICAL TRANSIENT CHARACTERISTICS

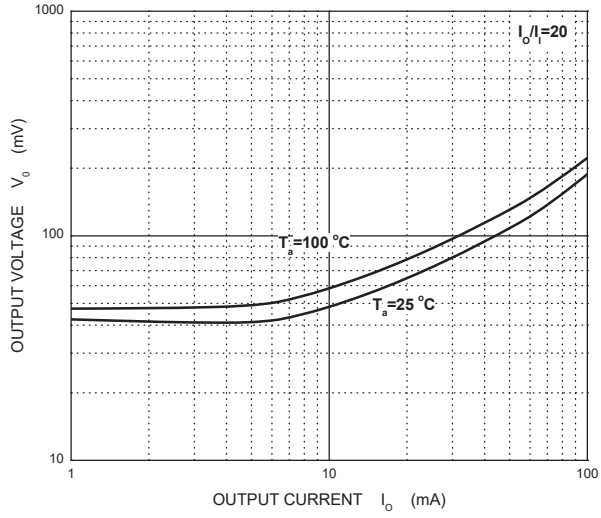
ON Characteristics



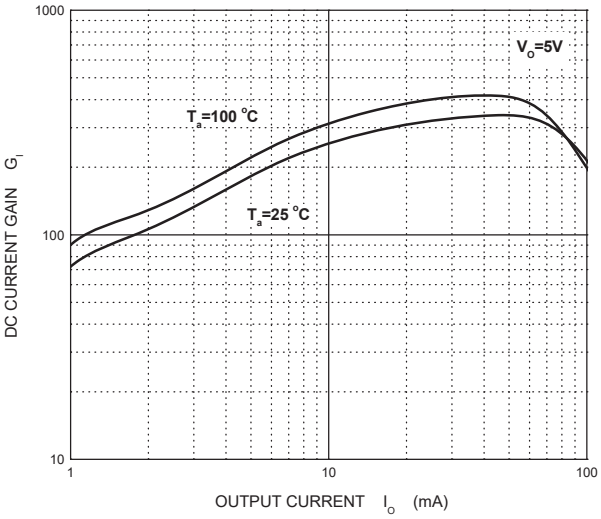
OFF Characteristics



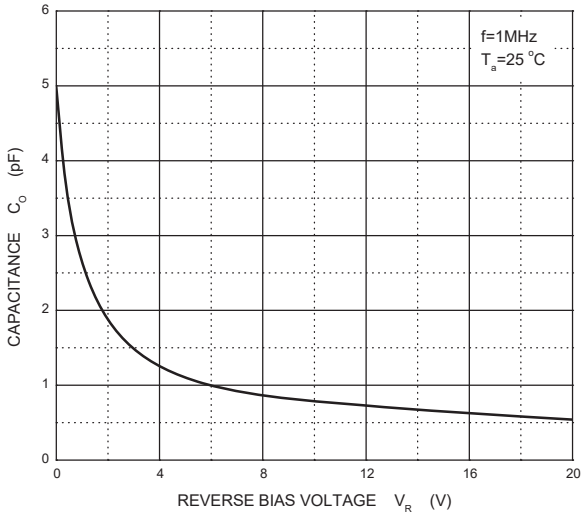
V_O — I_O



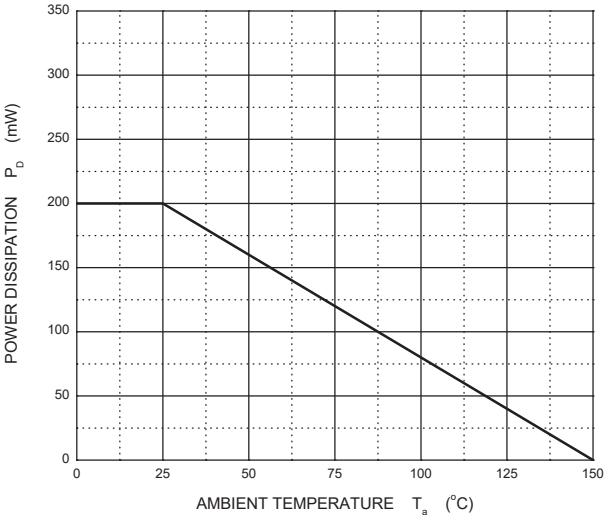
G_I — I_O



C_O — V_R



P_D — T_a



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