



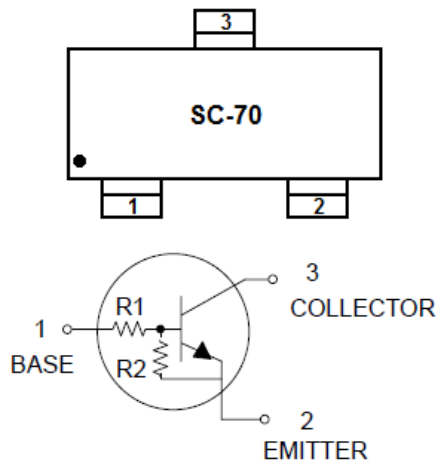
## DESCRIPTION

The DTC114EW is available in SOT-323(SC-70) package

## ORDERING INFORMATION

Package Type	Part Number
SOT-323 (SC-70)	DTC114EW
Note	SPQ: 3000Pcs/Reel
AiT provides all RoHS Compliant Products	

## PIN DESCRIPTION



## 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 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 the device design easy.
- Available in SOT-323(SC-70) package

## APPLICATIONS

- Inverter, Interface, Driver



## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub>=25°C

V <sub>CC</sub> , Supply Voltage	50V
V <sub>IN</sub> , Input Voltage	-10V ~ +40V
I <sub>O</sub> , Output Current	50mA
I <sub>C(Max.)</sub> , Output Current	100mA
P <sub>D</sub> , Power Dissipation	200mW
T <sub>J</sub> , Junction Temperature	150°C
T <sub>STG</sub> , Storage Temperature	-55°C ~ +150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Voltage	V <sub>I(off)</sub>	V <sub>CC</sub> =5V, I <sub>O</sub> =100μA	-	-	0.5	V
	V <sub>I(on)</sub>	V <sub>O</sub> =0.3V, I <sub>O</sub> =10mA	3	-	-	V
Output Voltage	V <sub>O(on)</sub>	I <sub>O</sub> /I <sub>I</sub> =10mA/0.5mA	-	0.1	0.3	V
Input Current	I <sub>I</sub>	V <sub>I</sub> =5V	-	-	0.88	mA
Output Current	I <sub>O(off)</sub>	V <sub>CC</sub> =50V, V <sub>I</sub> =0V	-	-	0.5	μA
DC Current Gain	G <sub>I</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =5mA	30	-	-	-
Input Resistance	R <sub>1</sub>		7	10	13	kΩ
Resistance Ratio	R <sub>2</sub> /R <sub>1</sub>		0.8	1	1.2	-
Transition Frequency	f <sub>T</sub> *	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz		250	-	MHz

NOTE1: "\*" Characteristics of built-in transistor



## TYPICAL CHARACTERISTICS

Figure 1. Input Voltage vs. Output Current  
(ON characteristics)

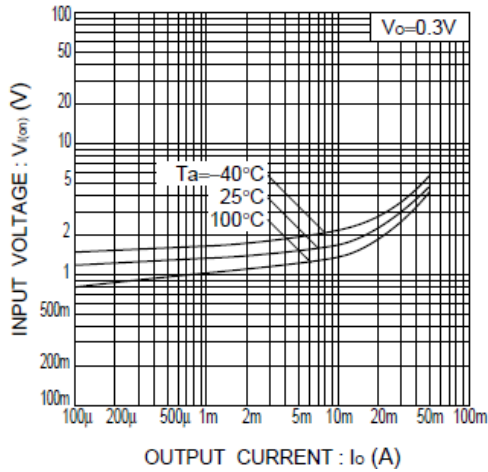


Figure 3. DC Current Gain vs. Output Current

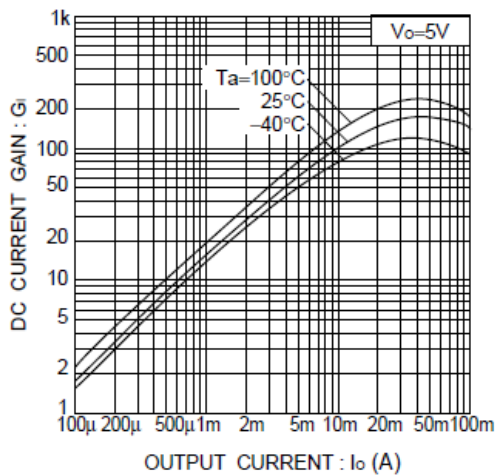


Figure 2. Output Current vs. Input Voltage  
(OFF characteristics)

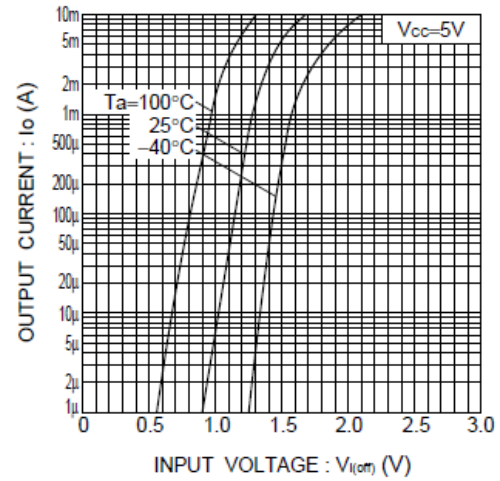
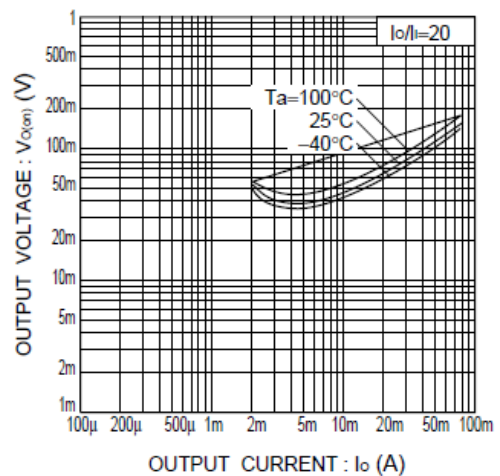


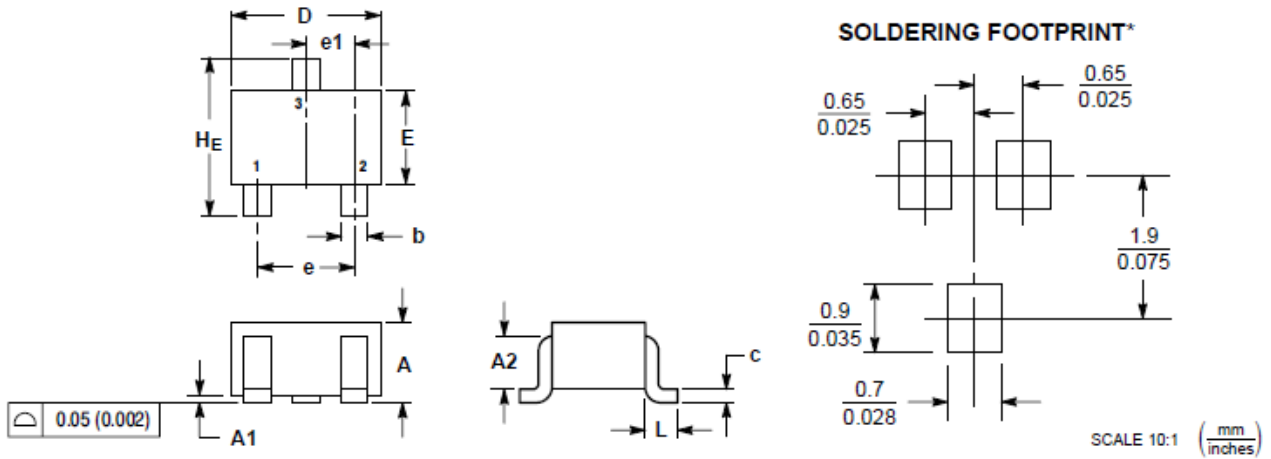
Figure 4. Output Voltage vs. Output Current





**PACKAGE INFORMATION**

Dimension in SOT-323(SC-70) (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.800	1.000	0.032	0.040
A1	0.000	0.100	0.000	0.004
A2	0.700 REF		0.028 REF	
B	0.300	0.400	0.012	0.016
c	0.100	0.250	0.004	0.010
D	1.800	2.200	0.071	0.087
E	1.150	1.350	0.045	0.053
e	1.200	1.400	0.047	0.055
E1	0.650 BSC		0.026 BSC	
L	0.425 REF		0.017 REF	
He	2.000	2.400	0.079	0.095



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