



DESCRIPTION

The DTC143X is available in SOT-23 package.

ORDERING INFORMATION

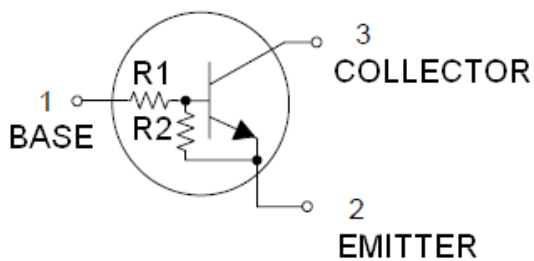
Package Type	Part Number
SOT-23	DTC143X
Note	3,000pcs /Reel

AiT provides all RoHS Compliant Products

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-23 package

PIN DESCRIPTION



APPLICATIONS

- Inverter
- Interface
- Driver



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C

V _{CC} , Supply voltage	50V
V _{IN} , Input voltage	-10V ~ +10V
I _C , Output current	100mA
P _D , Power dissipation	200mW
T _J , Junction temperature	150°C
T _{stg} , 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

T_A = 25°C

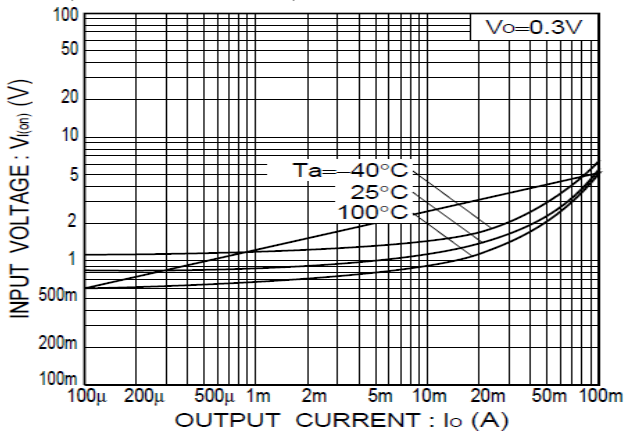
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input voltage	V _{I(off)}	V _{CC} = 5V, I _O = 100μA	-	-	0.5	V
	V _{I(on)}	V _O = 0.3V, I _O = 20mA	3	-	-	
Output voltage	V _{O(on)}	I _O / I _I = 10mA/0.5mA	-	0.1	0.3	V
Input current	I _I	V _I = 5V	-	-	1.8	mA
Output current	I _{O(off)}	V _{CC} = 50V, V _I = 0V	-	-	0.5	μA
DC current gain	G _I	V _O = 5V, I _O = 10mA	30	-	-	-
Input resistance	R ₁		3.29	4.7	6.11	kΩ
Resistance ratio	R ₂ /R ₁		1.7	2.1	2.6	-
Transition frequency	f _T NOTE	V _{CE} = 10V, I _E = -5mA, f = 100MHz	-	250	-	MHz

NOTE: Characteristics of built-in transistor.

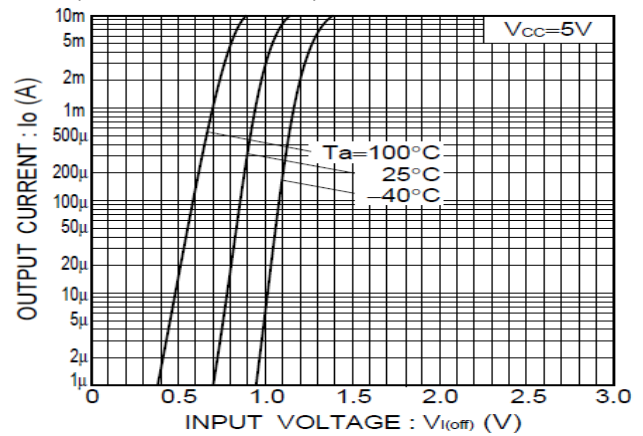


TYPICAL CHARACTERISTICS

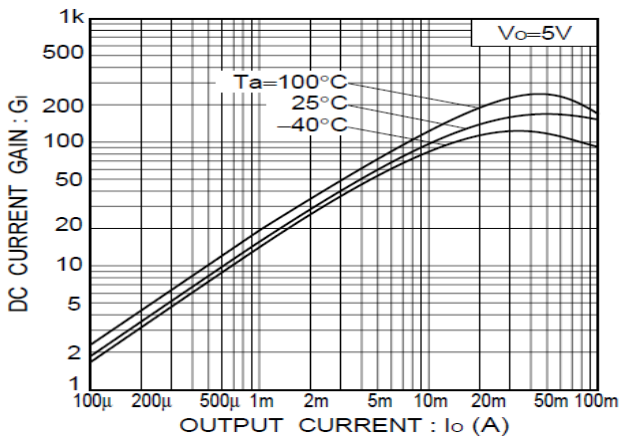
1. Input voltage vs. output current (ON characteristics)



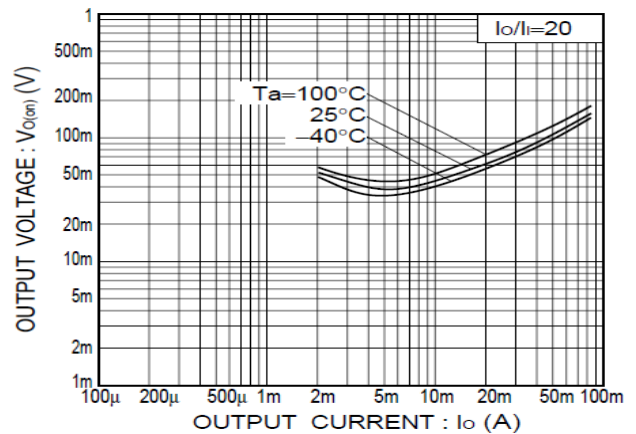
2. Output current vs. input voltage (OFF characteristics)



3. DC current gain vs. output current



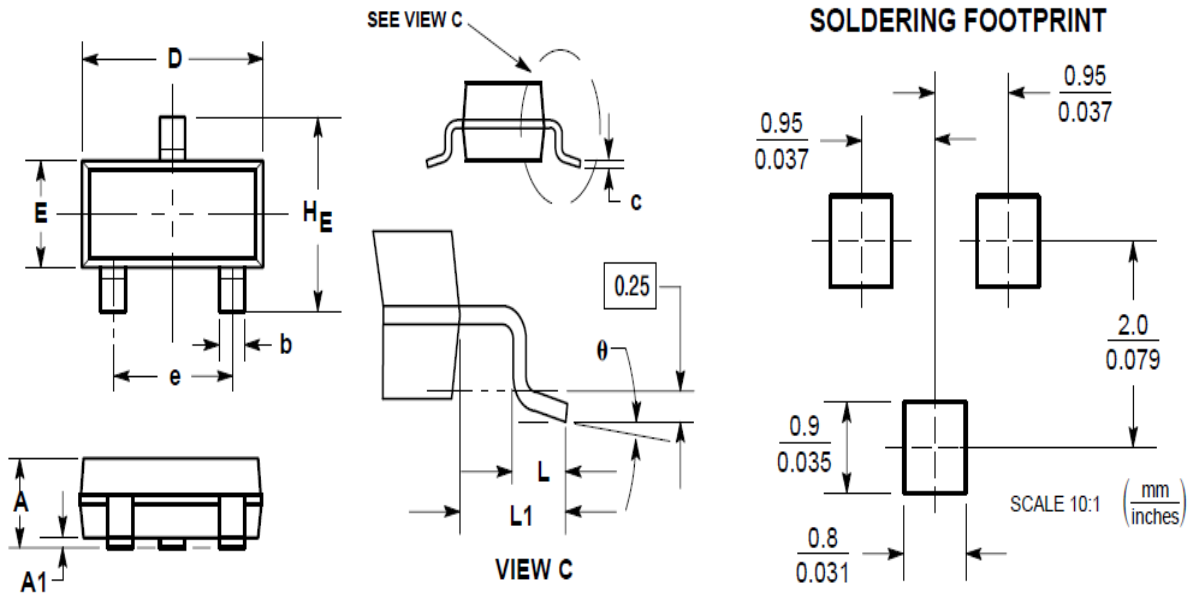
4. Output voltage vs. output current





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.044	0.89	1.11
A1	0.001	0.004	0.01	0.10
b	0.015	0.020	0.37	0.50
c	0.003	0.007	0.09	0.18
D	0.110	0.120	2.80	3.04
E	0.047	0.055	1.20	1.40
e	0.070	0.081	1.78	2.04
L	0.004	0.012	0.10	0.30
L1	0.014	0.029	0.35	0.69
HE	0.083	0.104	2.10	2.64



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.