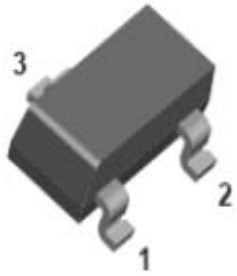
Digital Transistors (Built-in Resistors)



1. IN
2. GND
3. OUT

SOT-323

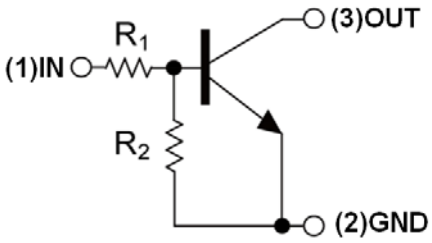
Features

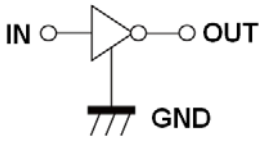
●Epoxy meets UL-94 V-0 flammability rating
●Moisture Sensitivity Level 1
●Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
●Surface mount package ideally Suited for Automatic Insertion
●NPN

Mechanical Data

- **Package**: SOT-323
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 43

■Equivalent circuit





■Maximum Ratings (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Supply Voltage	V_{CC}	V		50
Input Voltage	V_{IN}	V		-7 to +20
Output Current	I_O	mA		100
Power Dissipation	P_D	mW		200
Junction Temperature	Tj	℃		150
Storage Temperature	T_{STG}	℃		-55 to +150

■**Electrical Characteristics** (Ta=25℃ unless otherwise specified)

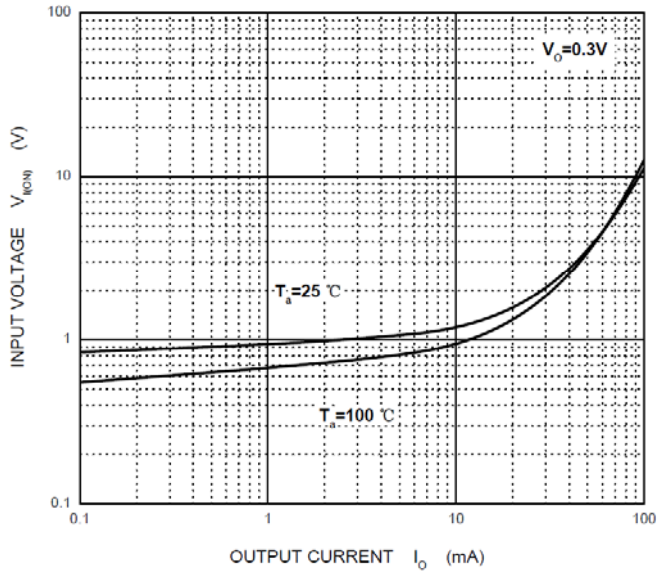
Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	$V_{I(off)}$	V	V_{CC}=5V,I_C=100uA	0.3		
	$V_{I(on)}$	V	V_0=0.3V,I_C=20mA			2.5
Output voltage	$V_{O(on)}$	V	I_o /I_i =10mA/0.5 mA			0.3
Output current	$I_{O(off)}$	uA	V_{CC}=50V, V_i=0			0.5
DC current gain	GI		V_o=5V, I_o =10mA	30		
Input resistance	R_1	kΩ		3.29	4.7	6.11
Resistance ratio	R_2/R_1			1.7	2.1	2.6
Transition frequency	fT	MHz	V_o=10V,I_O=5mA,f=100MHz		250	

■ **Ordering Information** (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
DTC143XUA	F2	Approximate 0.005	3000	30000	120000	7” reel

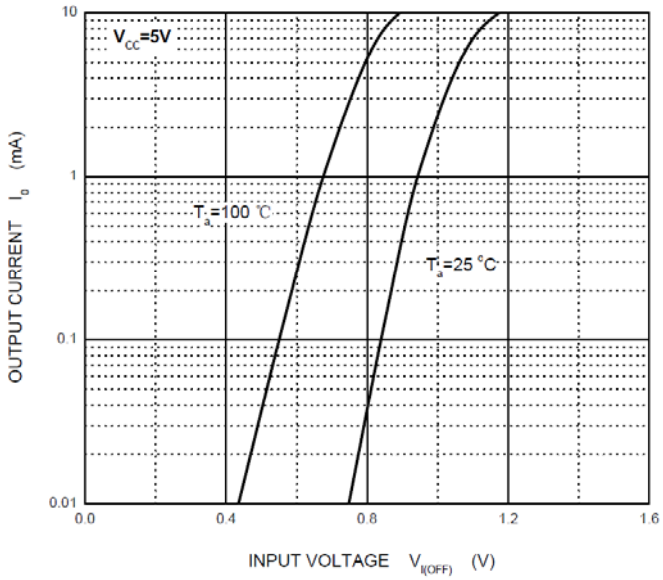
■ Characteristics (Typical)

ON Characteristics

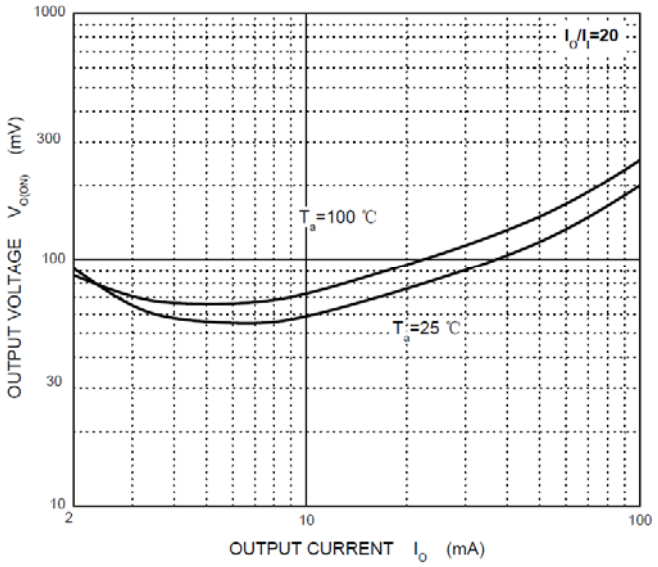


$V_{O(ON)}$ —— I_O

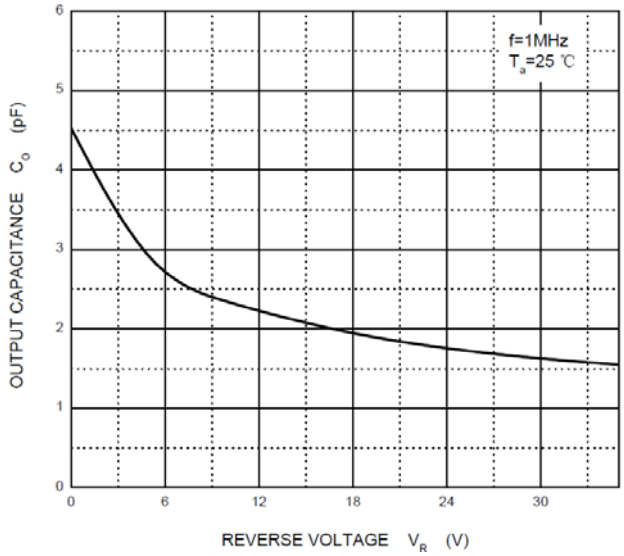
OFF Characteristics

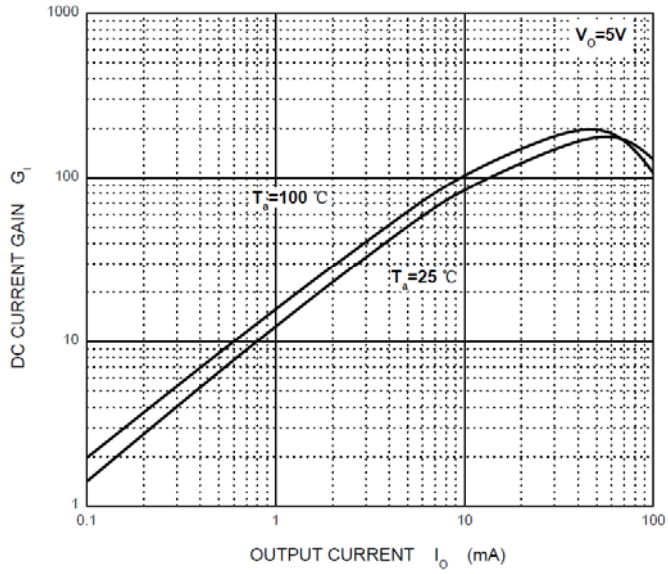


G_I —— I_O

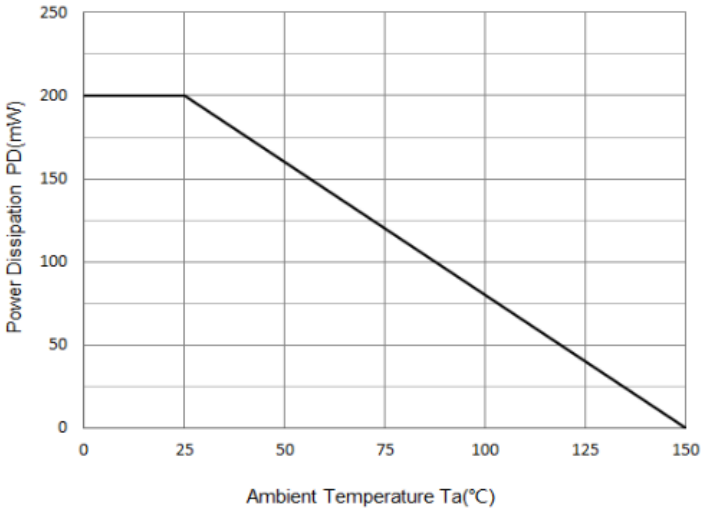


C_O —— V_R

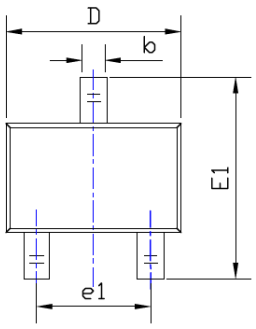




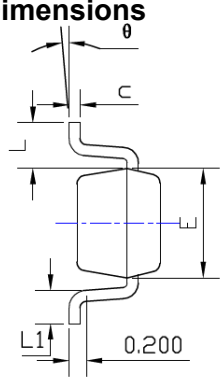
Power Derating Curve



■ SOT-323 Package Outline Dimensions



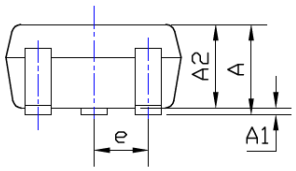
TOP VIEW



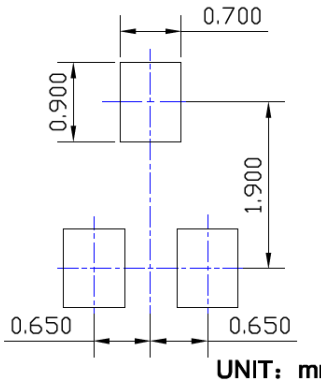
SIDE VIEW

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



SIDE VIEW



UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

Note:

1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4. All dimensions shown are exclusive of burrs and gate residues.
Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5. Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6. Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7. Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]
8. ★It is the key size.
[★ 标记为关键尺寸]

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