



## Digital Transistors (Built-in Resistors)

### 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:** TL



## Electrical Characteristics (Ta=25 unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	$V_{CC}=5V, I_c=100\mu A$	0.8		
	$V_{I(on)}$	V	$V_o=0.3V, I_c=2mA$			4
Output voltage	$V_{O(on)}$	V	$I_o / I_i = 10mA / 0.5 mA$			0.3
Input current	$I_i$	mA	$V_i=5V$			160
Output current	$I_{O(off)}$	$\mu A$	$V_{CC}=50V, V_i=0$			0.5
DC current gain	$G_I$		$V_o=5V, I_o = 5mA$	56		
Input resistance	$R_1$			33	47	61
Resistance ratio	$R_2/R_1$			0.37	0.47	0.57
Transition frequency	$f_T$	MHz	$V_o=10V, I_o=5mA, f=100MHz$		250	

## Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{-A}^{(1)}$	$^{\circ}W$	625
Thermal resistance, junction-to-case	$R_{-C}^{(1)}$	$^{\circ}W$	500

Note:

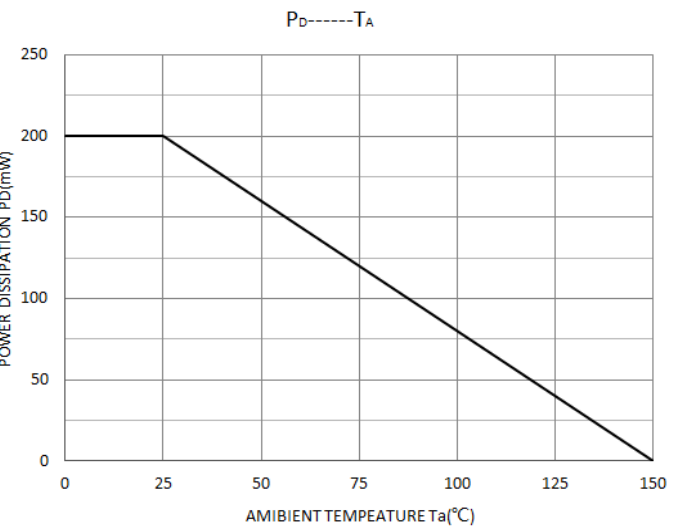
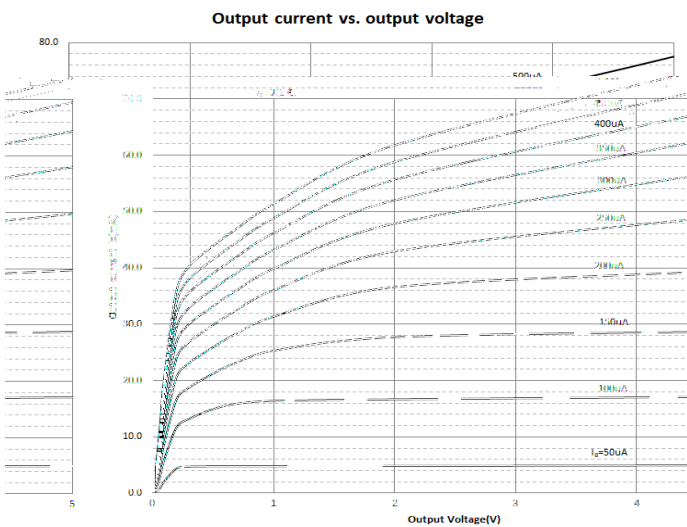
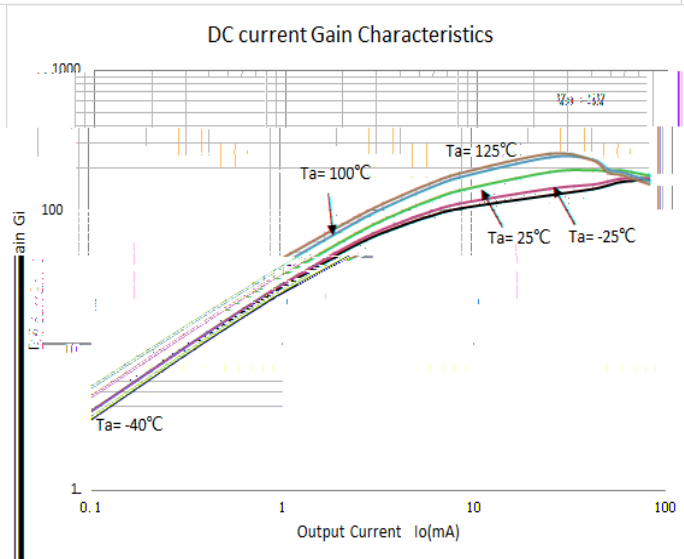
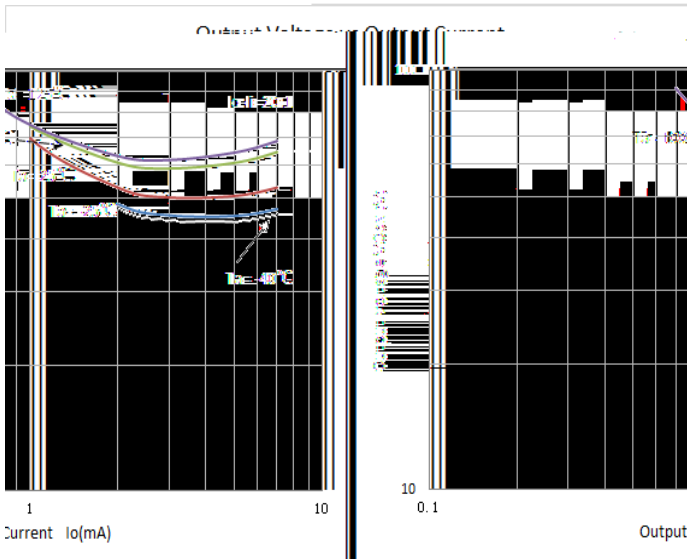
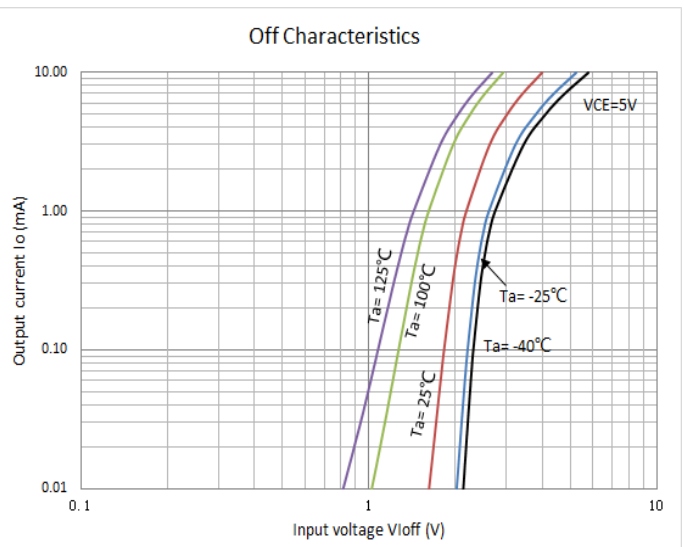
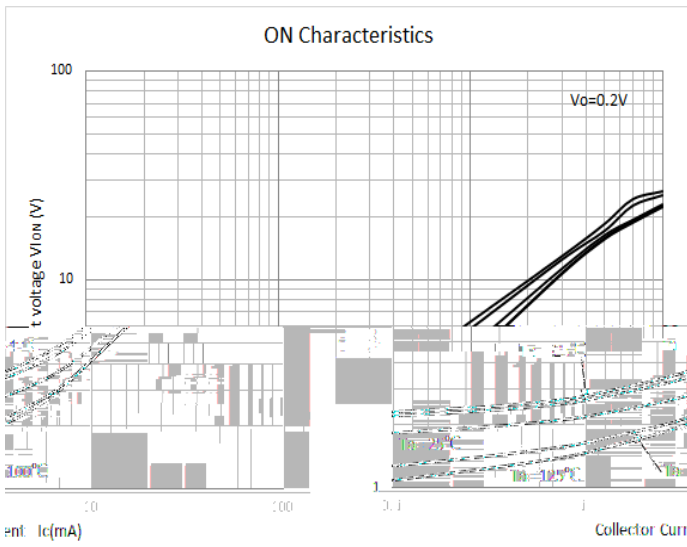
- 1 Device mounted on PCB, single-sided copper with standard footprint

## Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
DTC144WUA	F2	Approximate 0.005	3000	30000	120000	7

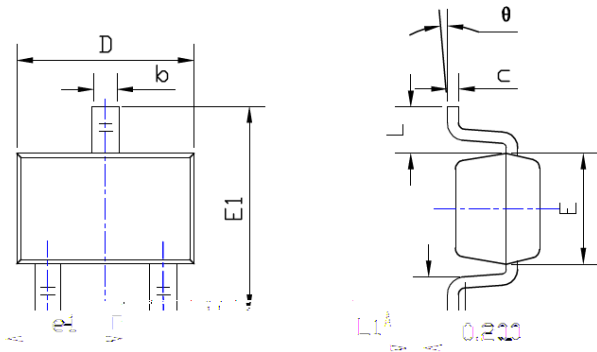


Characteristics (Typical)



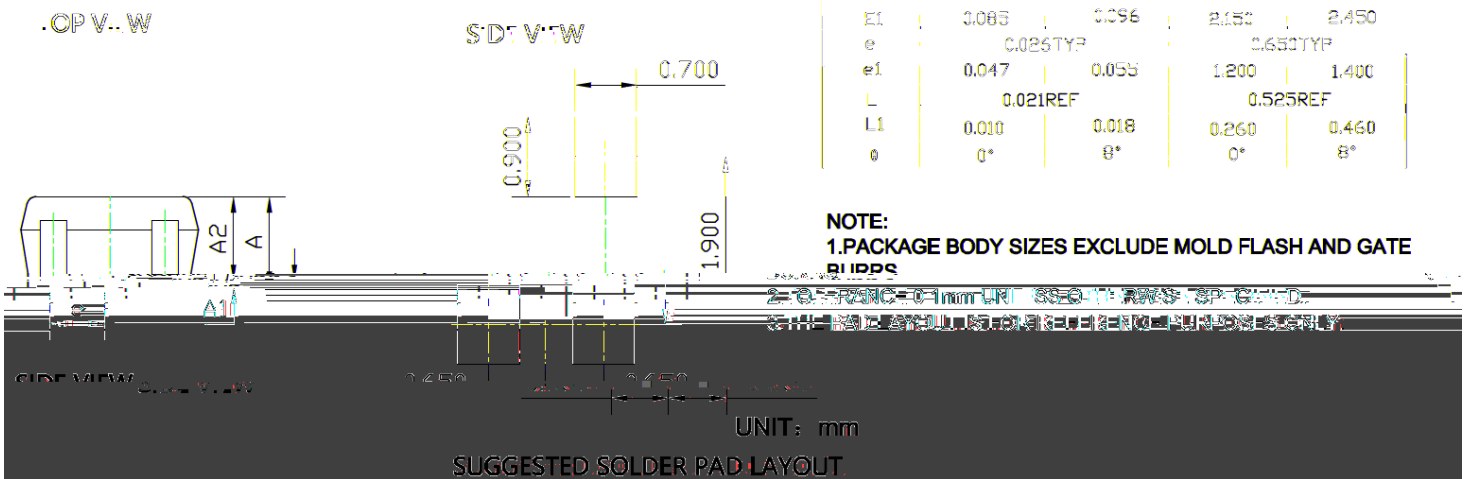


SOT-323 Package Outline Dimensions



SYMBOL	DIMENSIONS			
	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
D	0.004	0.010	0.100	0.200
E1	0.071	0.077	1.800	2.200
e	0.045	0.053	1.150	1.350
e1	0.025TYP		0.650TYP	
L	0.047	0.055	1.200	1.400
L1	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
theta	0°	8°	0°	8°

NOTE: 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS



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 exclude burrs and gate vestiges of maximum 0.15 mm in maximum.

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 mold compound.

These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold flash.

[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

口且包含了包封溢料的尺寸]

7. Formed leads shall be planar with respect to or within 0.076 mm of the seating plane.

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[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]

DTC17