



## 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** ( $T_a=25$  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:

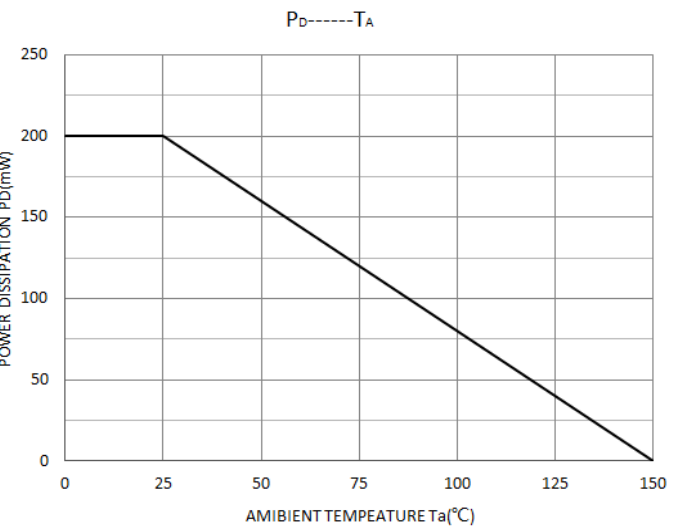
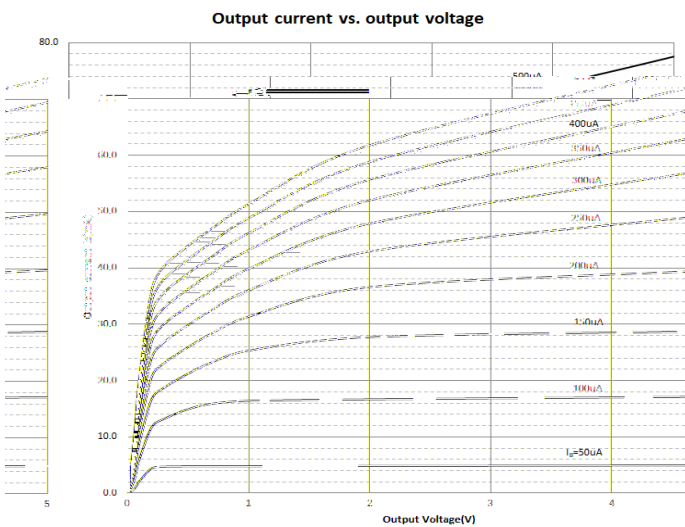
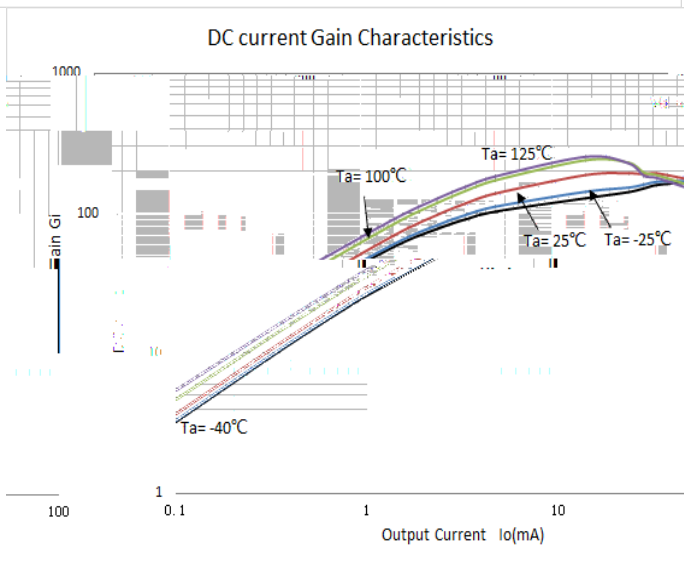
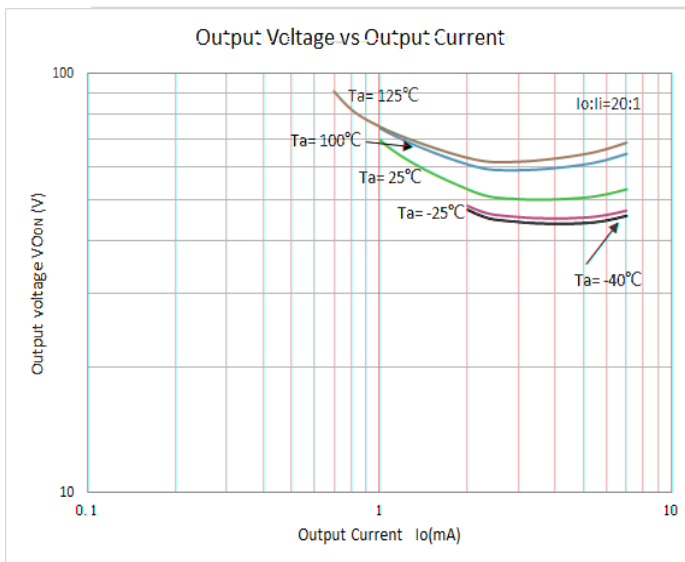
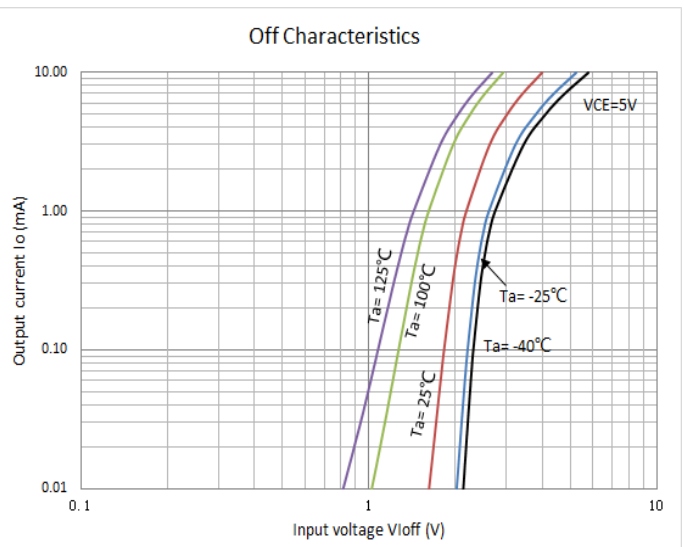
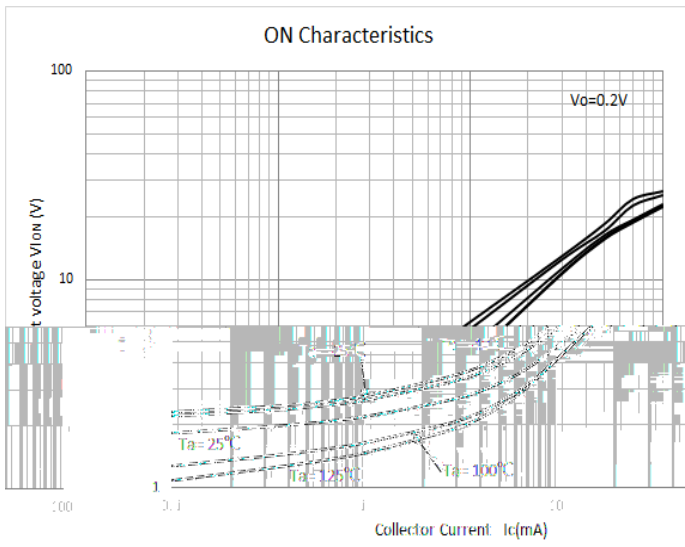
- 1 Device mounted on PCB, single-sided copper with standard footprint

**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

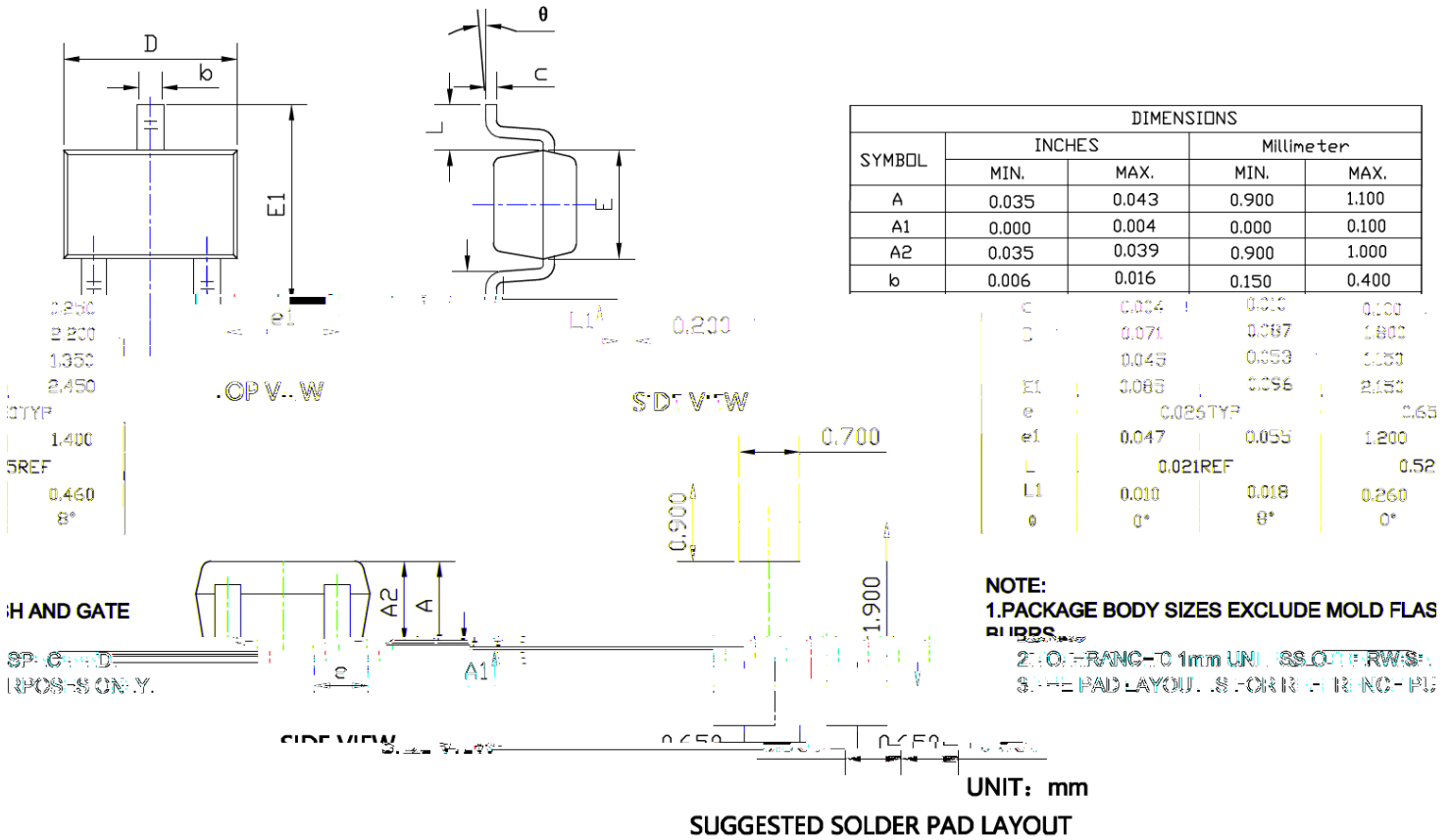


Characteristics (Typical)





SOT-323 Package Outline Dimensions



- Note:
- 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]
  - General tolerances: ±0.10mm unless otherwise specified.  
[通用公差为±0.10mm，除非另有说明]
  - Dimensions and tolerances per ASME Y14.5M-2018.  
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
  - 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]
  - 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]
  - 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、凸出部分以及胶体毛刺，但包括了包封溢料的最大尺寸]
  - 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]
  - ★It is the key size.  
[★ 标记为关键尺寸]

