

DTA143ZUA

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DTA143ZUA

PNP Silicon Epitaxial Planar Digital Transistor

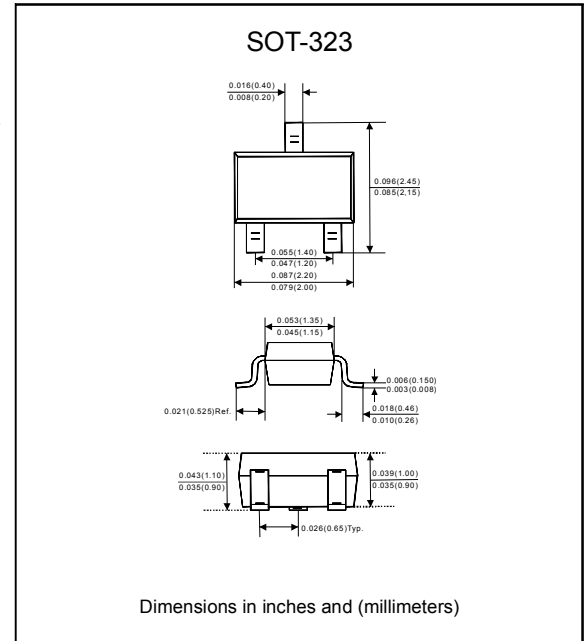
Features

- 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 device design easy.
- We declare that the material of product compliance with RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. DTA143ZUA-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Package outline



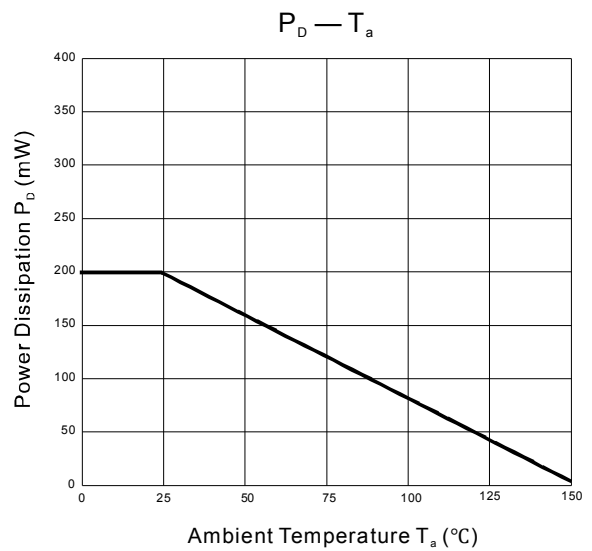
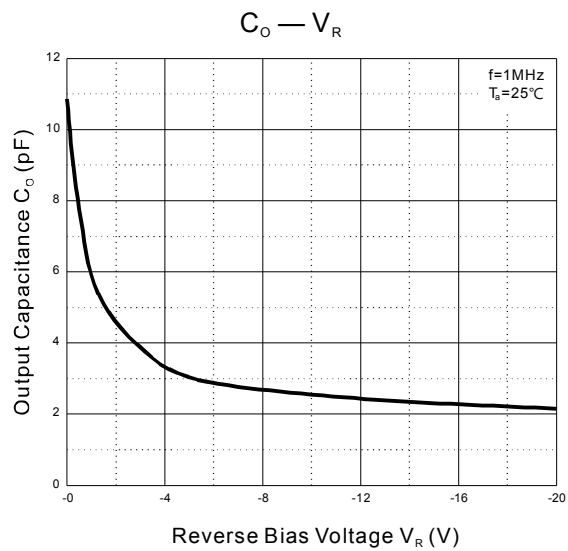
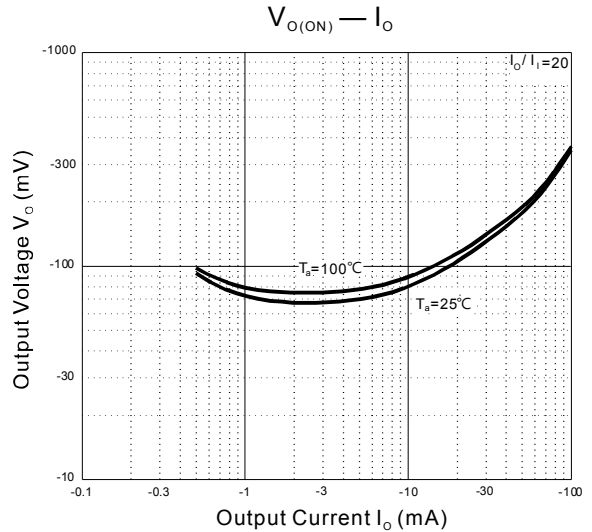
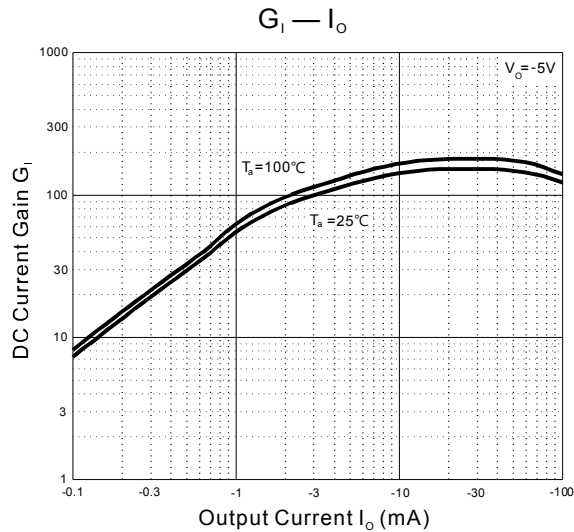
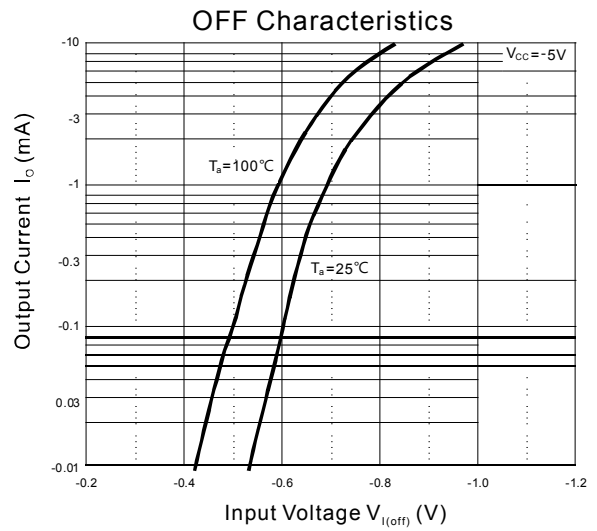
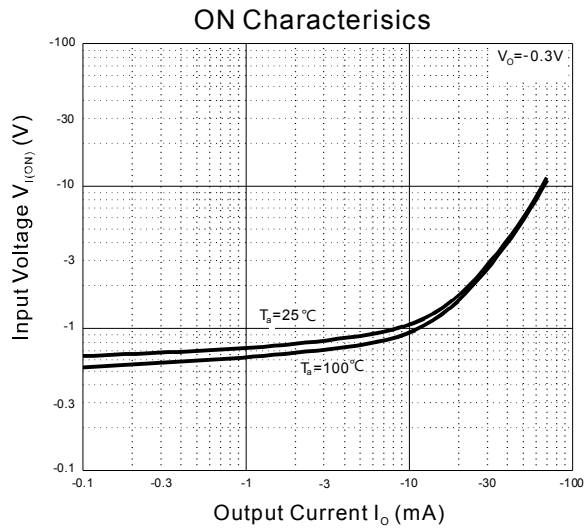
Maximum ratings (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply voltage	$-V_{CC}$	50	V
Input voltage	V_{IN}	-30 to +5	V
Output current	$-I_O$	100	mA
Power dissipation	P_D	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

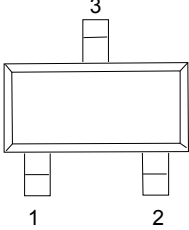
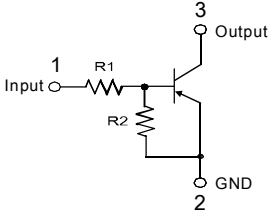
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC current gain	$-V_O=5V, -I_O=10mA$	G_I	80			
Input current	$-V_i=5V$	$-I_i$			1.8	mA
Output current	$-V_{CC}=50V, V_i=0V$	$-I_{O(off)}$			0.5	μA
Output voltage	$-I_O=5mA / -I_i=0.25mA$	$-V_{O(on)}$			0.3	V
Input off voltage	$-V_O=0.3V, -I_O=5mA$	$-V_{I(on)}$			1.3	V
	$-V_{CC}=5V, -I_O=100\mu A$	$-V_{I(off)}$	0.5			V
Transition frequency	$-V_O=10V, -I_O=5mA, f=100MHZ$	f_T		250		MHZ
Input resistance		R_1	3.29	4.7	6.11	K Ω
Resistance ratio		R_2 / R_1	9	10	12	

Rating and characteristic curves (DTA143ZUA)



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Pinning information

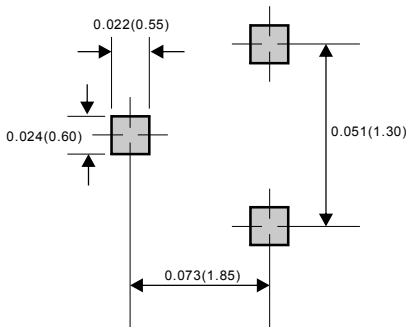
Pin	Simplified outline	Symbol
Pin1 BASE Pin2 EMITTER Pin3 COLLECTOR		

Marking and resistor values

Type number	Marking code
DTA143ZUA	E13

Suggested solder pad layout

SOT-323

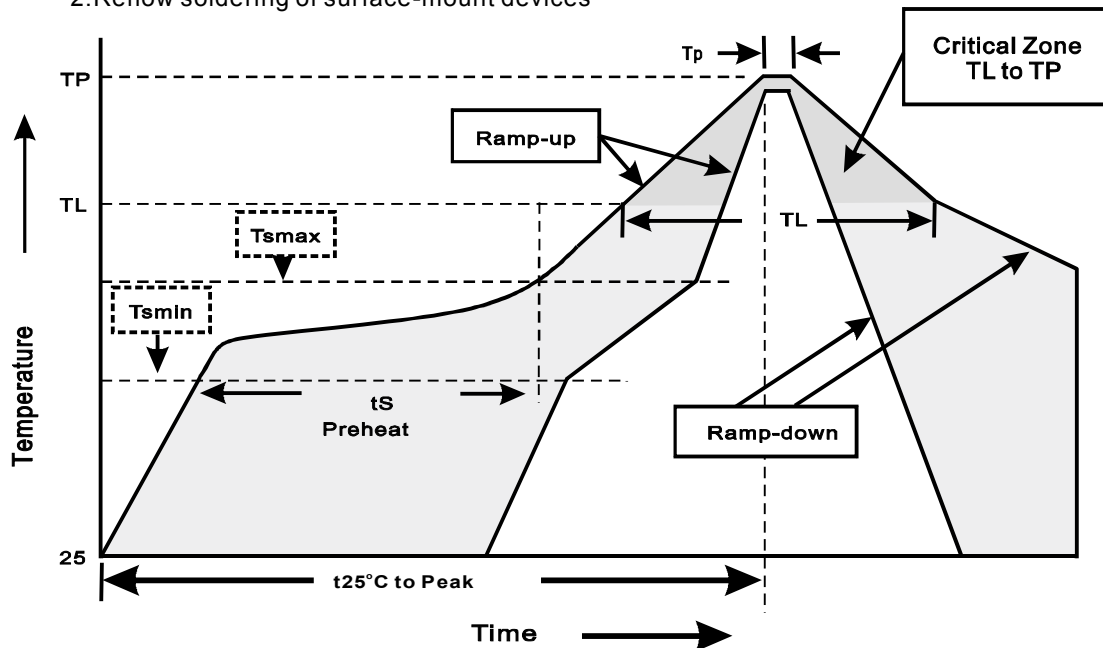


Dimensions in inches and (millimeters)

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Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} to T_L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes