

DTA143EE

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings	2
Electrical characteristics.....	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Suggested solder pad layout.....	4
Packing information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6

DTA143EE

PNP Silicon Epitaxial Planar Digital Transistor

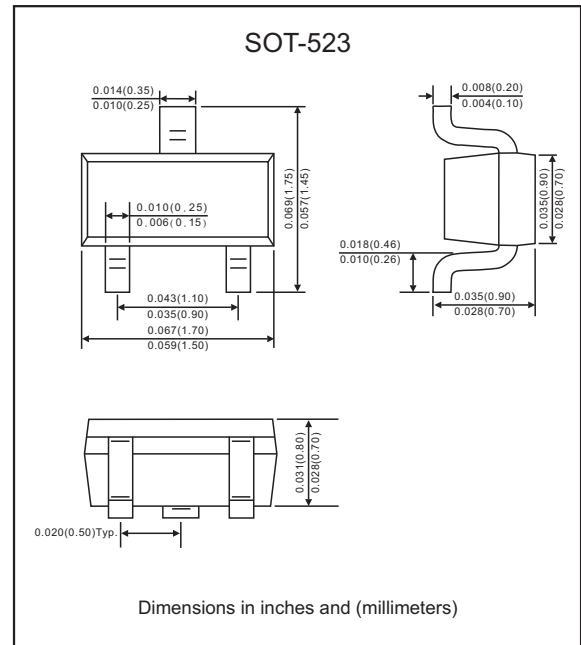
Features

- 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. DTA143EE-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-523
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Package outline



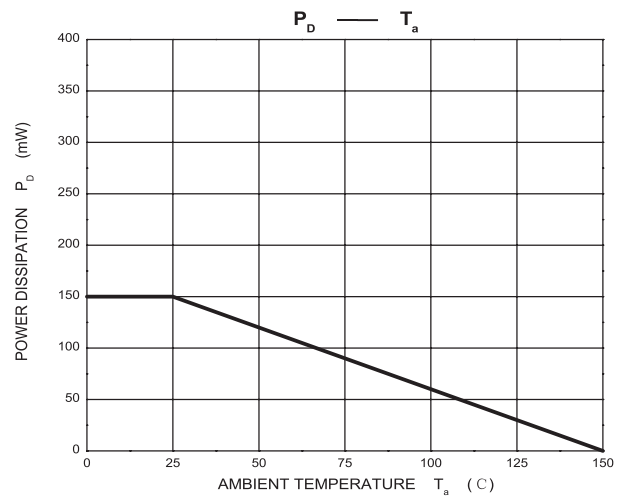
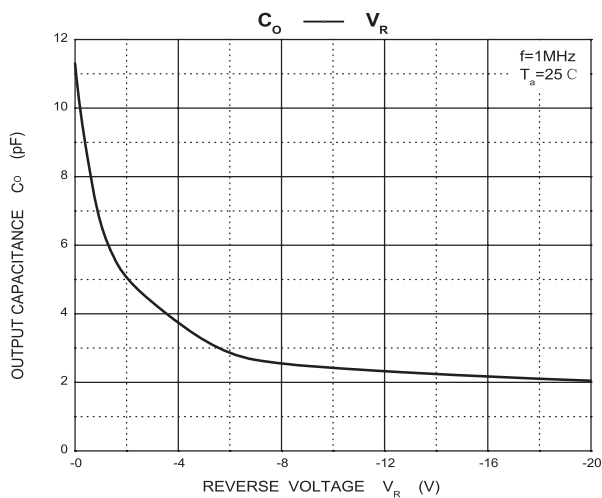
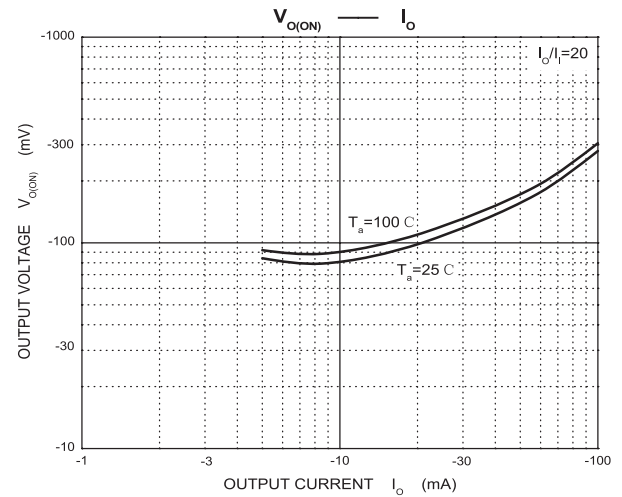
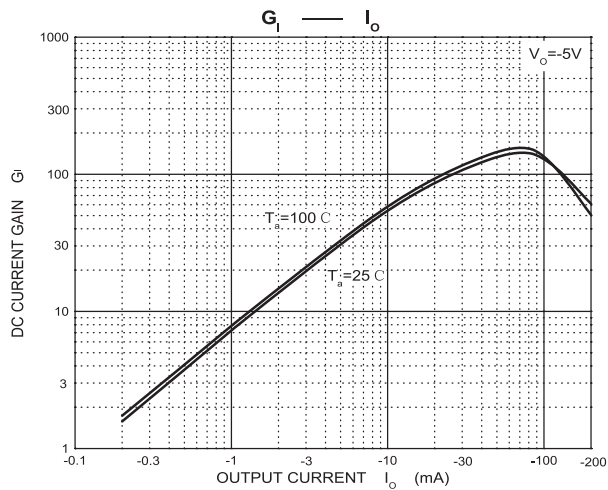
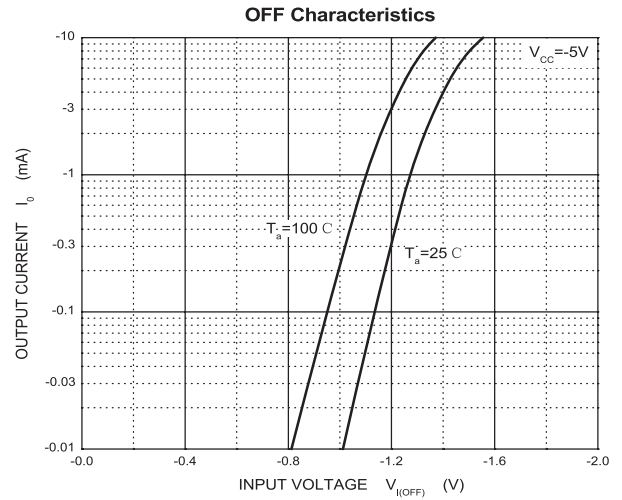
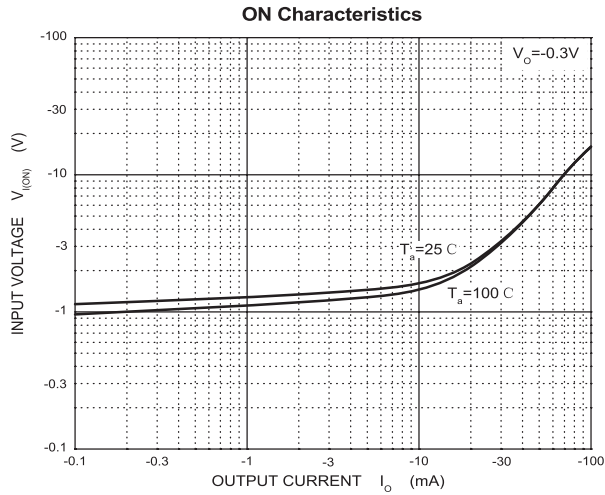
Maximum ratings (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply voltage	$-V_{CC}$	50	V
Input voltage	V_{IN}	-30 to +10	V
Output current	$-I_O$	100	mA
Power dissipation	P_D	150	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)

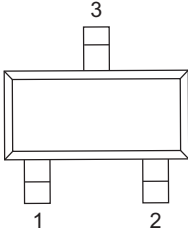
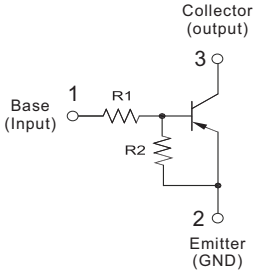
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Input voltage	$-V_{CC}=5V, -I_O=100\mu A$	$-V_{I(off)}$	0.5			V
	$-V_{CC}=0.3V, -I_O=20mA$	$-V_{I(on)}$			3	
Input current	$-V_i=5V$	$-I_i$			1.8	mA
Output current	$-V_{CC}=50V, V_i=0V$	$-I_{O(off)}$			0.5	μA
Output voltage	$-I_O=10mA / -I_i=0.5mA$	$-V_{O(on)}$			0.3	V
DC current gain	$-V_O=5V, I_O=10mA$	G_i	30			
Transition frequency	$-V_O=10V, -I_O=5mA, f=100MHz$	f_T		250		MHZ
Input resistance		R_i	3.29	4.7	6.11	K Ω
Resistance ratio		R_2 / R_1	0.8	1	1.2	

Rating and characteristic curves (DTA143EE)

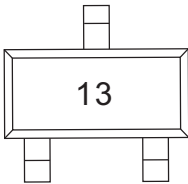


DTA143EE

Pinning information

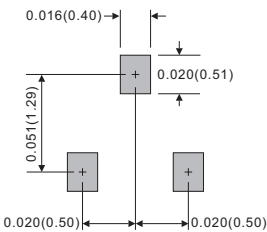
Pin	Simplified outline	Symbol
Pin1 Base Pin2 Emitter Pin3 Collector		

Marking

Type numbe	Marking code
DTA143EE	

Suggested solder pad layout

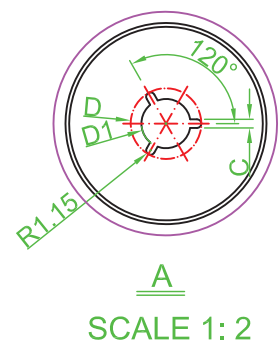
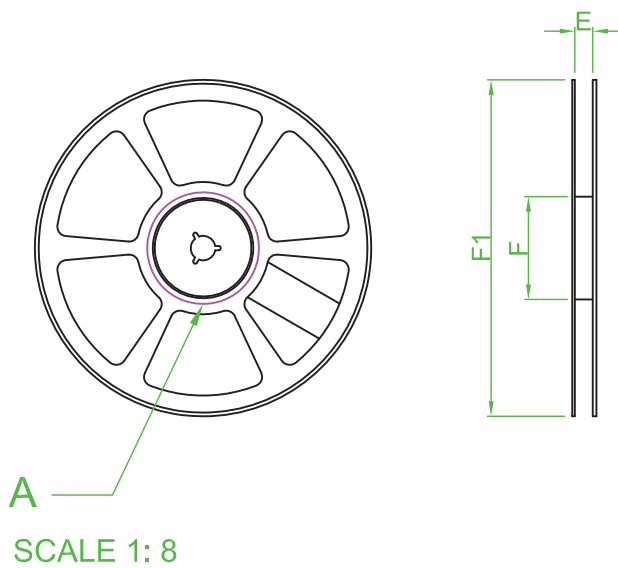
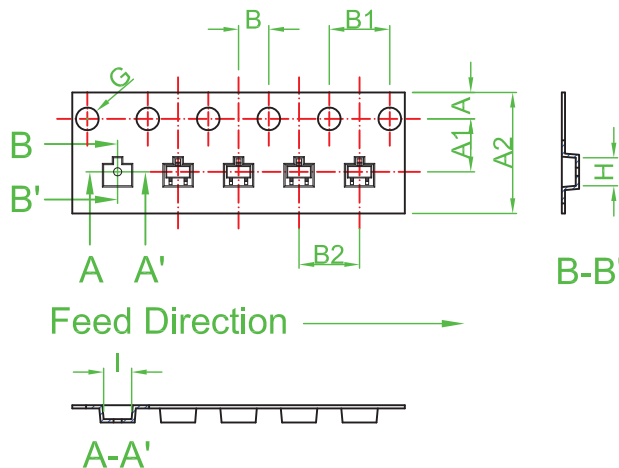
SOT-523



Dimensions in inches and (millimeters)

DTA143EE

Packing information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.65	1.85	0.065	0.073
A1	3.45	3.55	0.136	0.140
A2	7.90	8.20	0.311	0.323
B	1.95	2.05	0.077	0.081
B1	3.90	4.10	0.154	0.161
B2	3.90	4.10	0.154	0.161
C	1.50	3.00	0.059	0.118
D	21.00	22.00	0.827	0.866
D1	12.50	13.50	0.492	0.531
E	8.50	9.50	0.335	0.374
F	53.90	54.90	2.122	2.161
F1	177.00	179.00	6.969	7.047
G	1.50	1.60	0.059	0.063
H	1.80	1.90	0.071	0.075
I	1.80	1.90	0.071	0.075

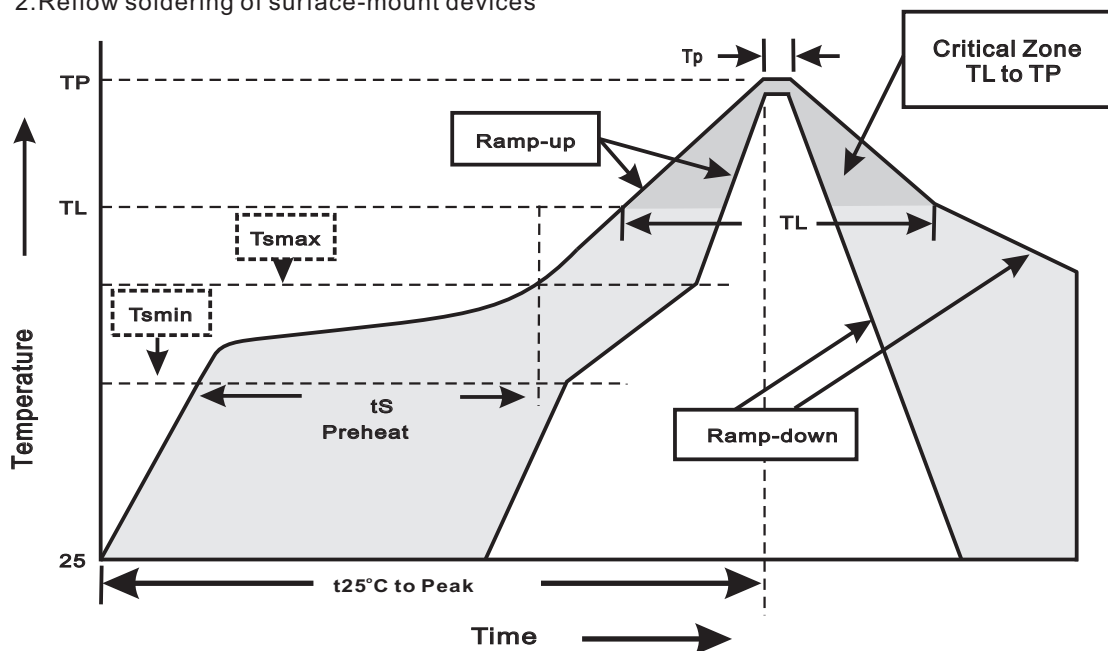
DTA143EE

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-523	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	9.5

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