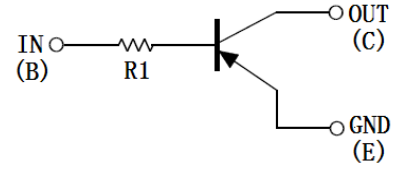




## DTA143TM/DTA143TE/DTA143TUA DTA143TKA /DTA143TCA/DTA143TSA

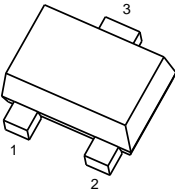
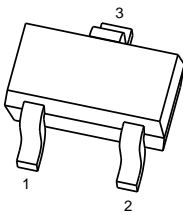
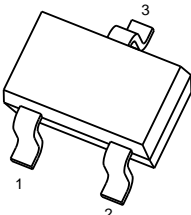
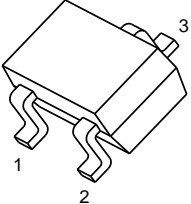
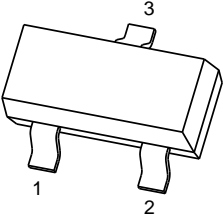
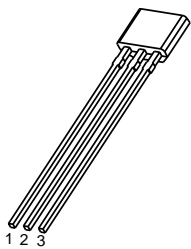
DIGITAL TRANSISTOR (PNP)



### 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

### PIN CONNENCTIONS and MARKING

<b>DTA143TM</b>  1. IN 2. GND 3. OUT	<b>SOT-723</b>	<b>DTA143TE</b>  1. IN 2. GND 3. OUT	<b>SOT-523</b>
<b>DTA143TUA</b>  1. IN 2. GND 3. OUT	<b>SOT-323</b>	<b>DTA143TKA</b>  1. IN 2. GND 3. OUT	<b>SOT-23-3L</b>
<b>DTA143TCA</b>  1. IN 2. GND 3. OUT	<b>SOT-23</b>	<b>DTA143TSA</b>  1. GND 2. OUT 3. IN	<b>TO-92S</b>



### ORDERING INFORMATION

Part Number	MARKING <sup>(1)</sup>	Package	Packing Method	Pack Quantity
DTA143VM	93	SOT-723	Reel	8000pcs/Reel
DTA143VE	93	SOT-523	Reel	3000pcs/Reel
DTA143VUA	93	SOT-323	Reel	3000pcs/Reel
DTA143VKA	93	SOT-23-3L	Reel	3000pcs/Reel
DTA143VCA	93	SOT-23	Reel	3000pcs/Reel

### MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

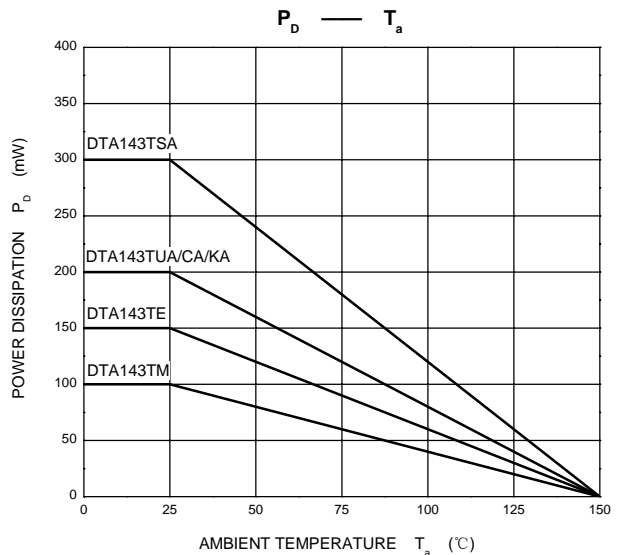
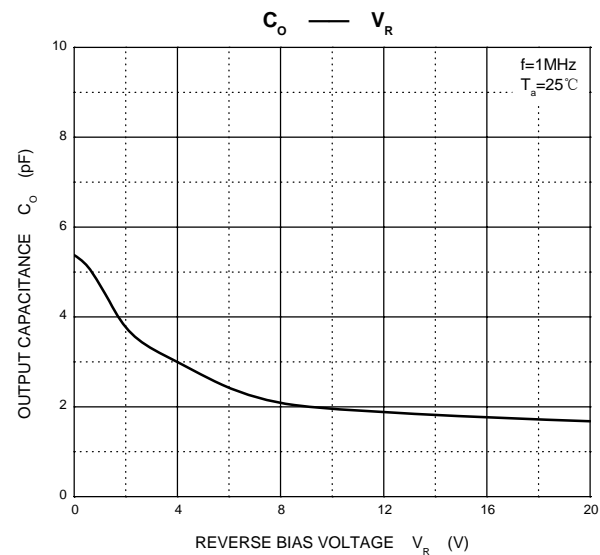
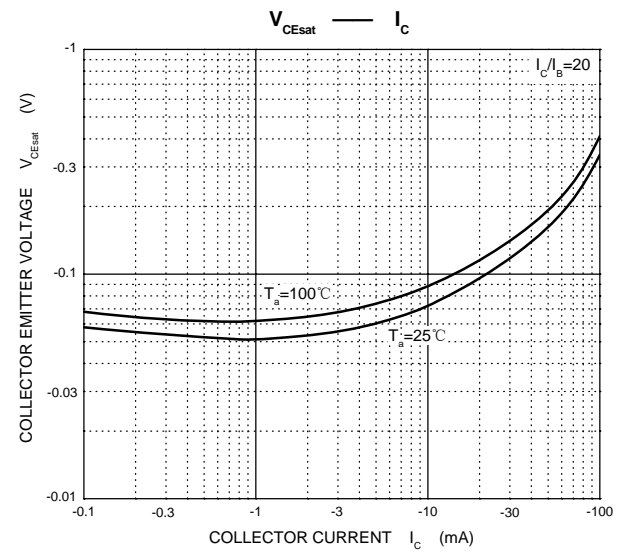
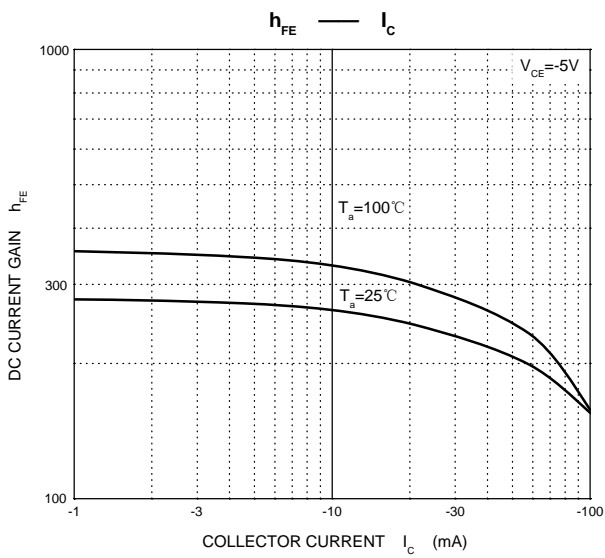
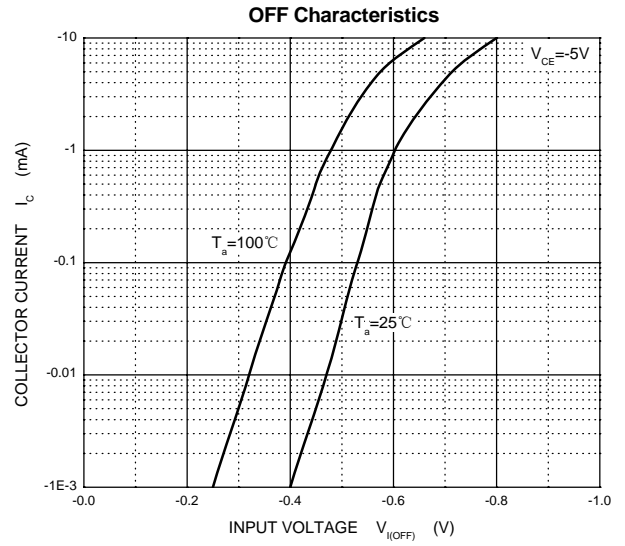
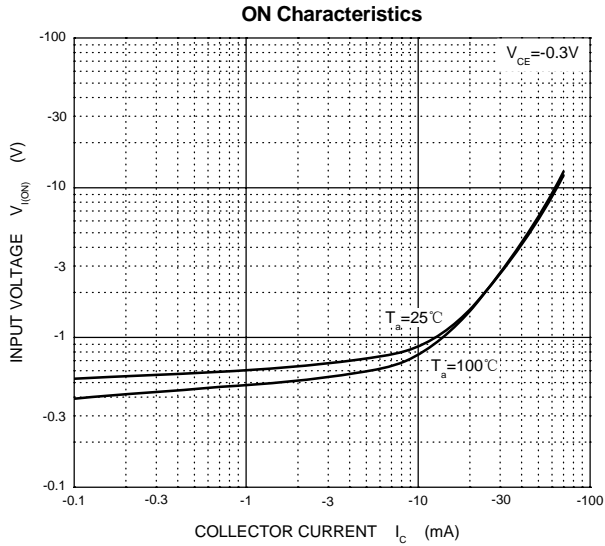
Symbol	Parameter	Limits(DTA143T□)						Unit
		M	E	UA	KA	CA	SA	
V <sub>CBO</sub>	Collector-Base Voltage	-50						V
V <sub>CEO</sub>	Collector-Emitter Voltage	-50						V
V <sub>EBO</sub>	Emitter-Base Voltage	-5						V
I <sub>C</sub>	Collector Current	-100						mA
P <sub>D</sub>	Power Dissipation	100	150	200	200	200	300	mW
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150						°C

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-50μA, I <sub>E</sub> =0	-50			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-50μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-0.5	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0			-0.5	μA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-5mA, I <sub>B</sub> =-0.25mA			-0.3	V
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	100		600	
Input resistor	R <sub>1</sub>		3.29	4.7	6.11	kΩ
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz		250		MHz



## Typical Characteristics

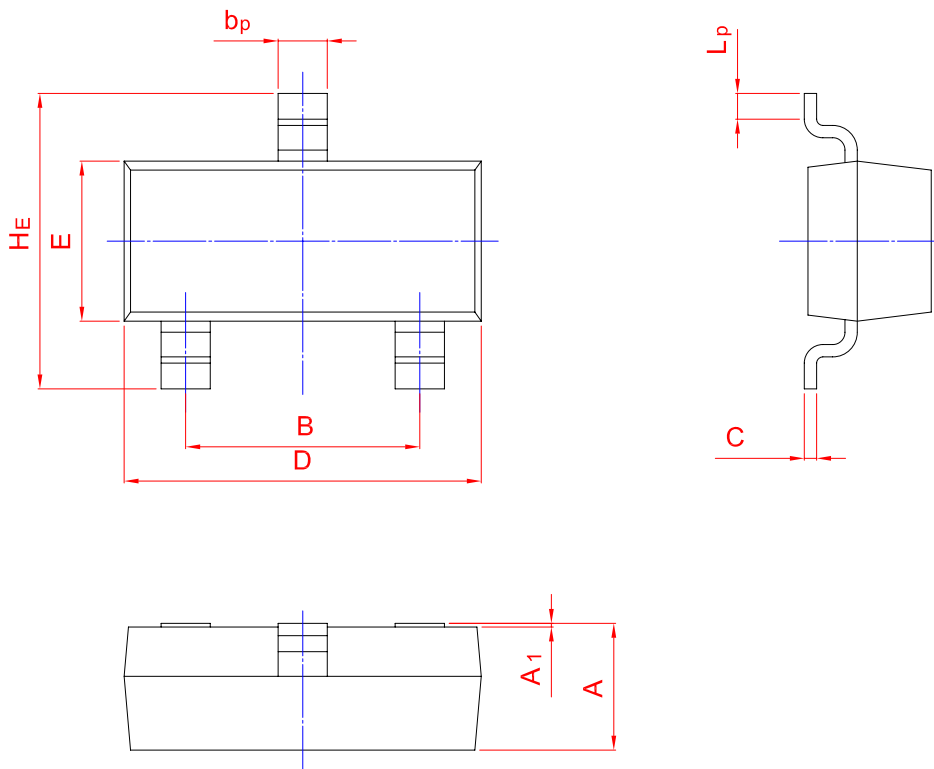
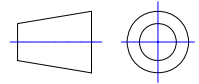




## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

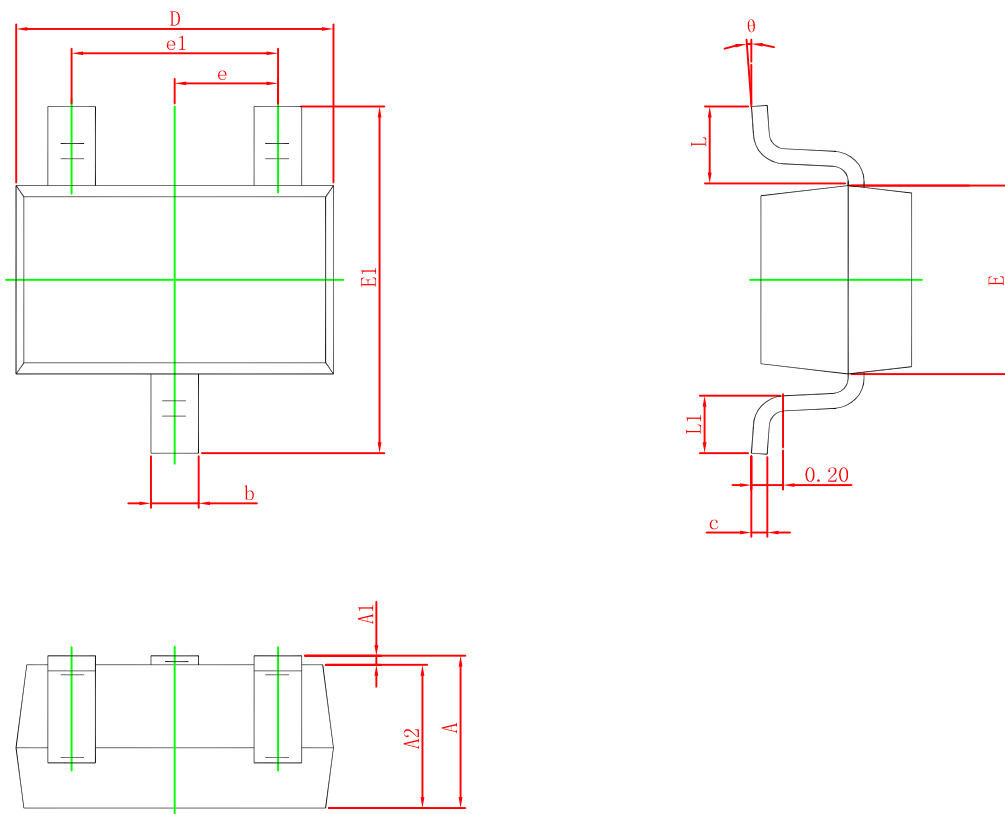
SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20



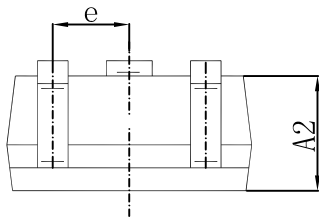
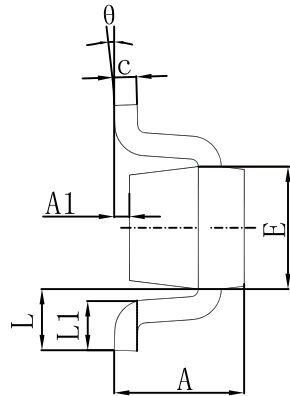
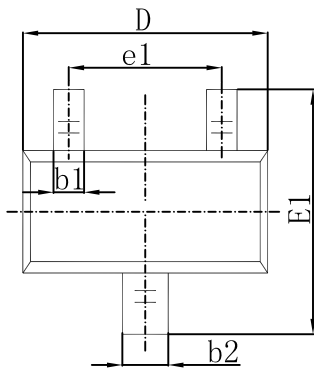
## SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

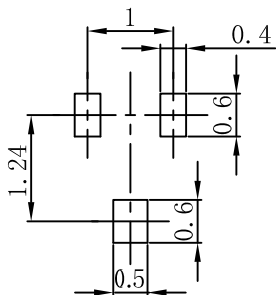


### SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

### SOT-523 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.