

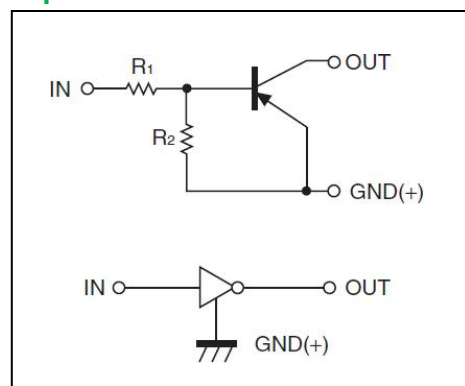
Digital Transistors (Built-in Resistors)

DIGITAL TRANSISTOR (PNP)

Features

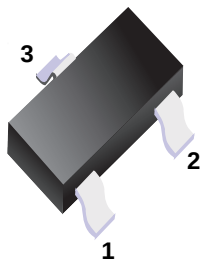
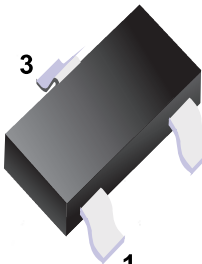
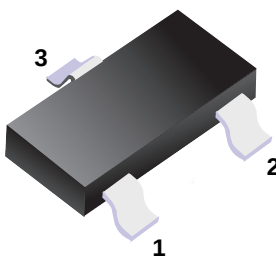
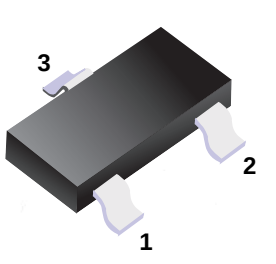
- ◆ Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- ◆ The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- ◆ Only the on/off conditions need to be set for operation, making device design easy

Equivalent Circuit



Part Number	MARKING	Package
DTA143XE	33	SOT-523
DTA143XUA	33	SOT-323
DTA143XKA	33	SOT23-3L
DTA143XCA	33	SOT-23

PIN CONNENCTIONS and MARKING

DTA143XE  SOT-523 1. IN 2. GND 3. OUT	DTA143XUA  SOT-323 1. IN 2. GND 3. OUT
DTA143XKA  SOT23-3L 1. IN 2. GND 3. OUT	DTA143XCA  SOT-23 1. IN 2. GND 3. OUT

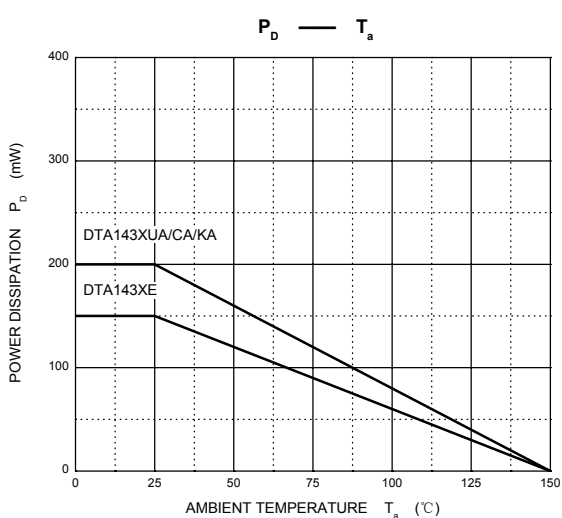
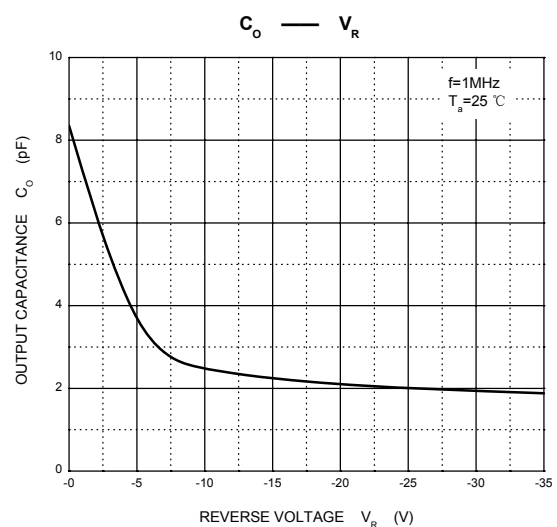
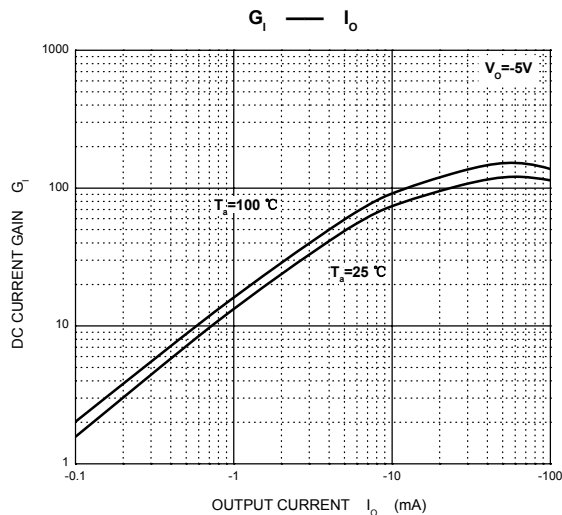
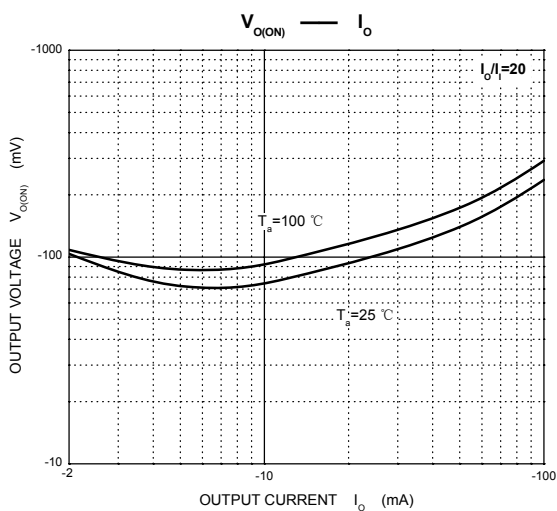
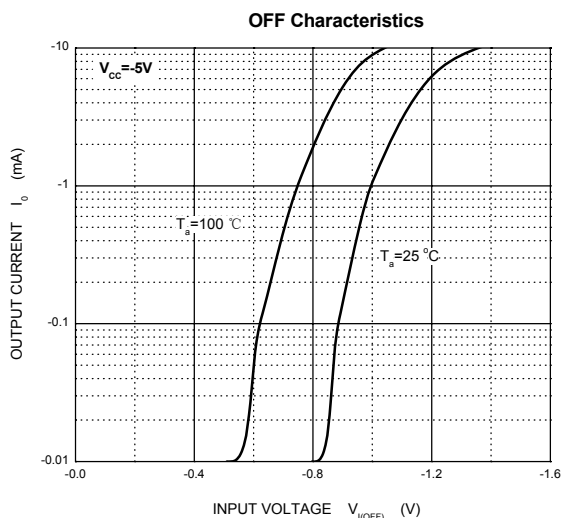
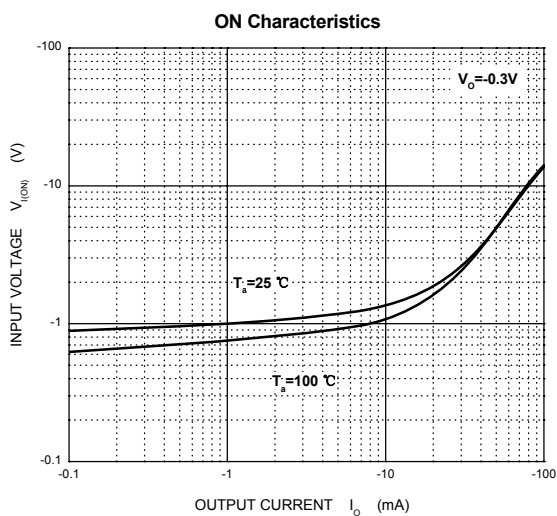
MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Limits(DTA143X□)				Unit
		E	UA	CA	KA	
Supply Voltage	V _{CC}	-50				V
Input Voltage	V _{IN}	-20~+7				V
Output Current	I _O	-100				mA
Power Dissipation	P _D	150	200	200	200	mW
Operation Junction and Storage Temperature Range	T _J ,T _{stg}	-55~+150				℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Input voltage	V _{CC} =-5V,I _O =-100μA	V _{I(off)}	-0.3			V
	V _O =-0.3V ,I _O =-20mA	V _{I(on)}			-2.5	V
Output voltage	I _O /I _I =-10mA/-0.5mA	V _{O(on)}		-0.1	-0.3	V
Input current	V _I =-5V	I _I			-1.8	mA
Output current	V _{CC} =-50V,V _I =0	I _{O(off)}			-0.5	μA
DC current gain	V _O =-5V,I _O =-10mA	G _I	30			
Input resistance		R ₁	3.29	4.7	6.11	kΩ
Resistance ratio		R ₂ /R ₁	1.7	2.1	2.6	
Transition frequency	V _O =-10V,I _O =-5mA,f=100MHz	f _T		250		MHz

Typical Characteristics



Ordering information

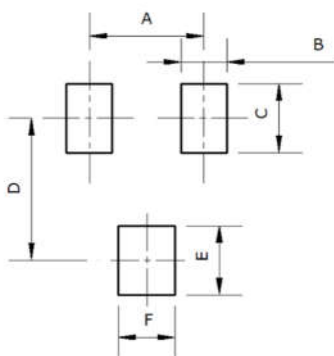
Package	Packing Description	Base Quantity	Packing Quantity
SOT-523	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-523

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.50	1.70	59	67
B	0.75	0.85	30	33
C	1.45	1.75	57	69
D	0.50TYP		0.020TYP	
E	0.90	1.10	35	43
G	0.00	0.10	0	4
H	0.60	0.80	24	31
J	0.10	0.20	4	8
K	0.15	0.35	6	14
L	0.26	0.46	10	18

The recommended mounting pad size



Millimeter (mm)	
Dim.	TYP
A	1.00
B	0.40
C	0.60
D	1.24
E	0.60
F	0.50

Ordering information

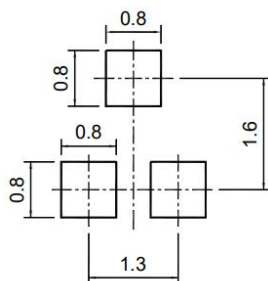
Package	Packing Description	Base Quantity	Packing Quantity
SOT-323	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-323

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
A1	0.1		4	
bp	0.3	0.4	12	16
C	0.10	0.25	4	10
D	1.8	2.2	71	87
E	1.15	1.35	45	53
e	1.3		51	
e1	0.65		26	
HE	2.0	2.2	79	87
Lp	0.15	0.45	6	18
Q	0.13	0.23	5.1	9
v	0.2		8	
W	0.2		8	

The recommended mounting pad size



Ordering information

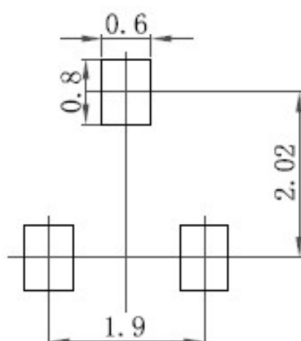
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT23-3L

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
a	0.95		37.4	
a1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



Ordering information

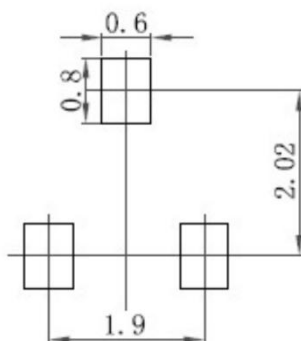
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
e	1.9		75	
e1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



Disclaimer

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