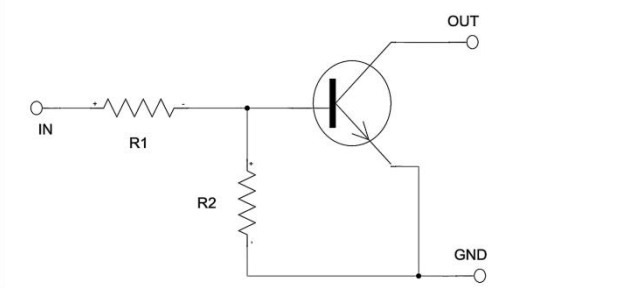
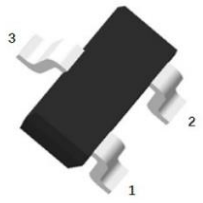
NPN 100mA 50V SOT-523 Digital Transistors NPN (Built-in Resistors)



Circuit diagram



1: IN
2: GND
3: OUT
Marking: E23A

Top view

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.
- Device meets MSL 1 requirements

Ordering Information

Part Number	Shipping	Reel Size
PDTC143AZE	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

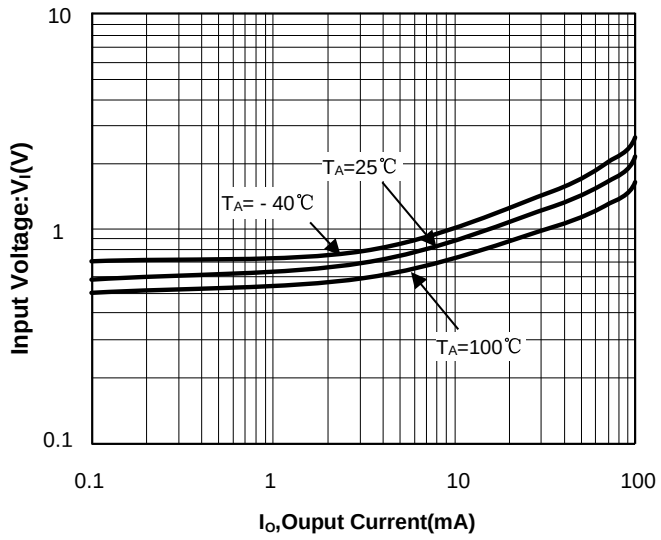
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5~+30	V
Output Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_j	150	℃
Storage Temperature	T_{STG}	-50~ +150	℃

Electrical Characteristics (T_A=25°C unless otherwise specified)

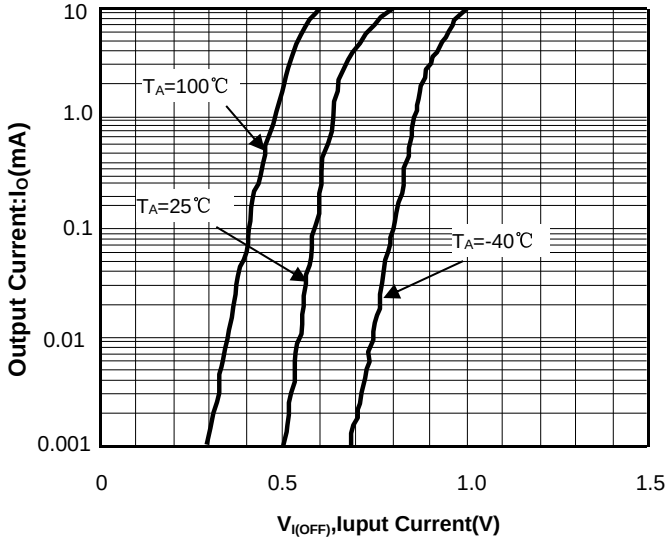
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC}=5V, I_O=100μA	0.5	-	-	V
	$V_{I(on)}$	V_O=0.3V, I_O=5mA	-	-	1.3	V
Output Voltage	$V_{O(on)}$	I_O/I_I=5mA/0.25mA	-	0.1	0.3	V
Input Current	I_I	V_I=5V	-	-	1.8	mA

Output Current	$I_{O(off)}$	V_{CC}=50V, V_I=0	-	-	0.5	μA
DC Current Gain	G_I	V_O=5V, I_O=10mA	80	-	-	-
Input resistance	R_1	-	3.29	4.7	6.11	kΩ
Resistance ratio	R_2/R_1	-	8	10	12	-
Transition frequency	f_T	V_O=10V, I_O=5mA, f=100MHz	-	250	-	MHz

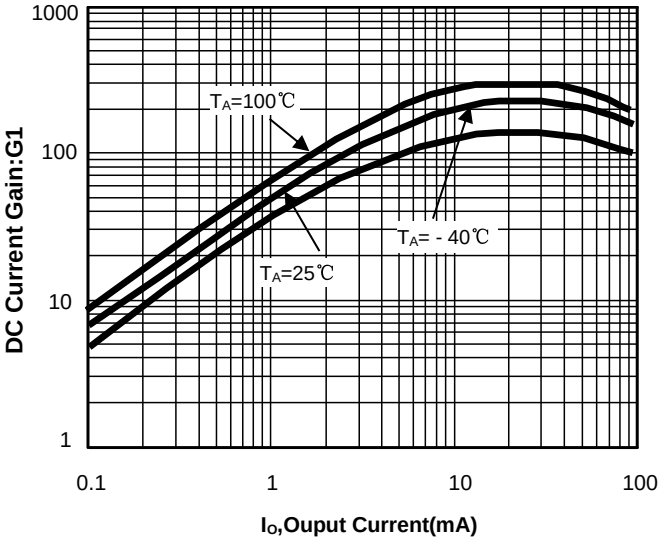
Typical Electrical and Thermal Characteristics



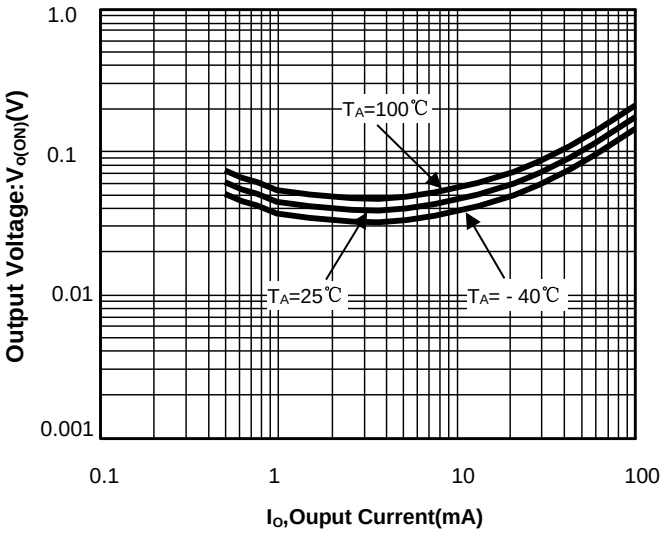
Input Voltage vs. Output Current



Output Current vs. Input Voltage

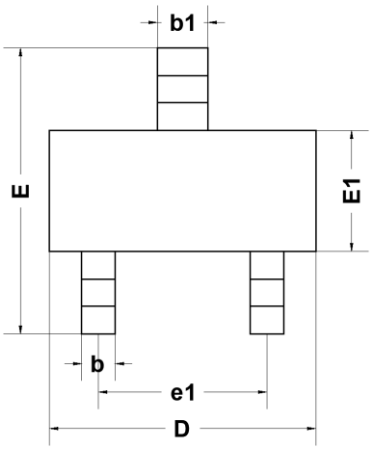


DC Current Gain vs. Output Current

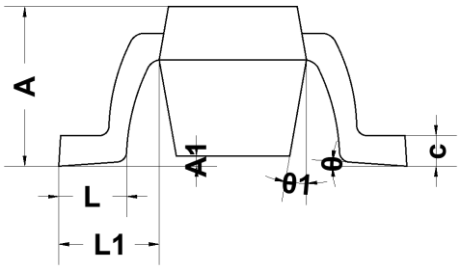


Output Voltage vs. Output Current

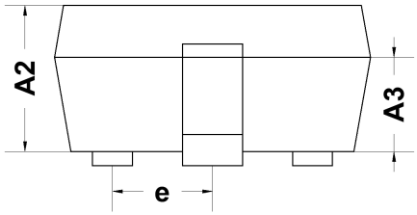
SOT-523 Package Outline Drawing



TOP VIEW



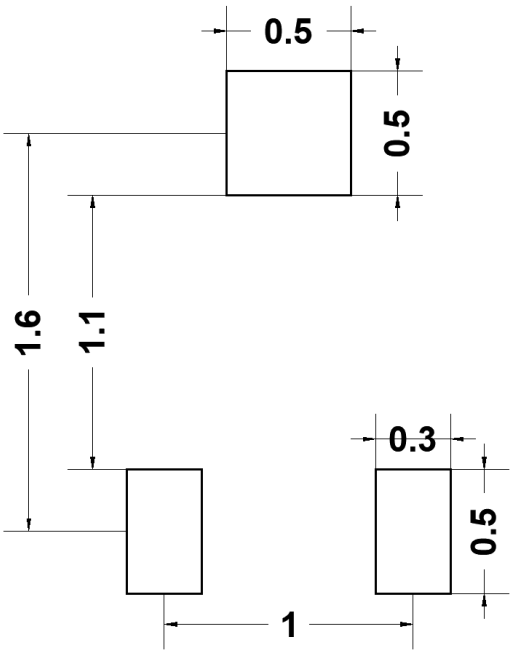
SIDE VIEW



FORNT VIEW

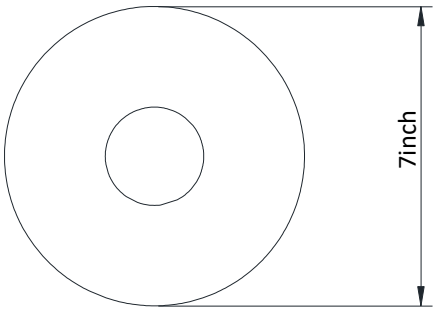
SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.68	0.78	0.88
A1	0.01	0.05	0.10
A2	0.63	0.73	0.83
A3	0.42	0.47	0.52
b	0.15	0.20	0.25
b1	0.25	0.30	0.35
c	0.10	0.15	0.20
D	1.48	1.58	1.68
E1	0.62	0.72	0.82
E	1.55	1.70	1.85
e	0.50 BSC.		
e1	0.95	1.00	1.05
L1	0.49 REF.		
L	0.21	0.33	0.45
θ	0°	4°	8°
θ1	10°		

Suggested Land Pattern

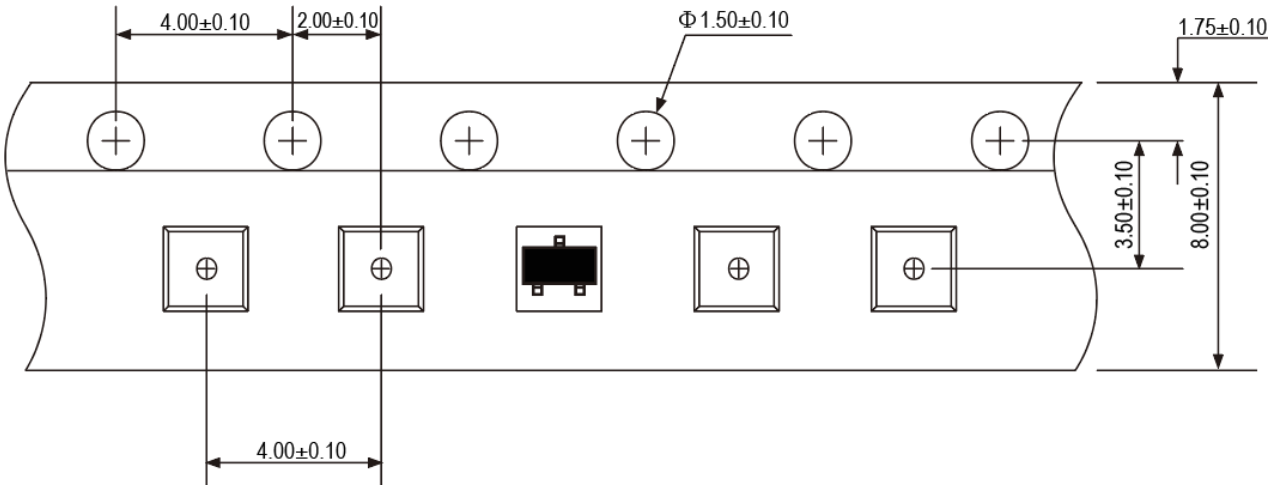


TAPE AND REEL INFORMATION

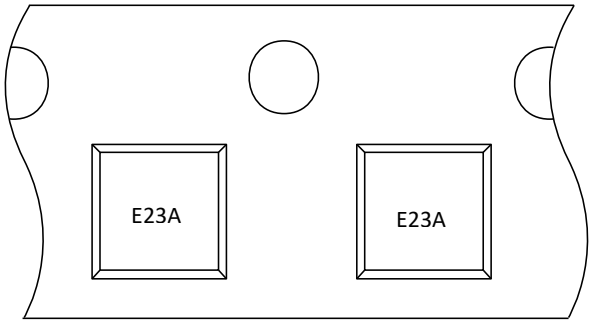
Reel Dimensions



Tape Dimensions



Unit:mm



User Direction of Feed

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

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