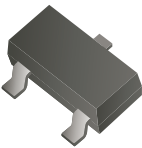


ADTC143ZCA-HF (NPN)

RoHS Device
Halogen Free

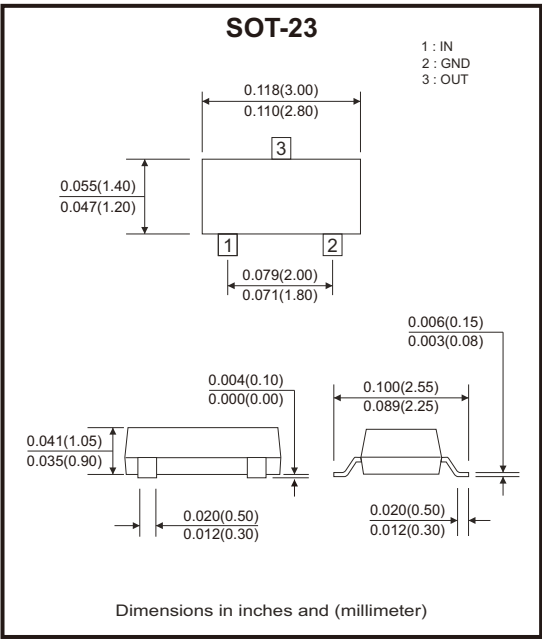


Features

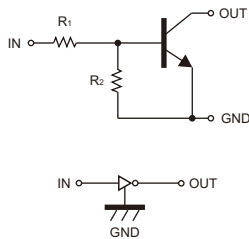
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making device design easier.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.



Circuit Diagram



Maximum Ratings (at T_J=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _{IN}	-5 to 30	V
Output current (Note 1)	I _O	100	mA
Maximum power dissipation (Note 1)	P _D	200	mW
Operating junction and storage temperature range	T _J , T _{STG}	-55 to 150	°C

Note: 1. Maximum allowed temperature T_J=25°C.

Electrical Characteristics (at T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	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 = 0V			0.5	μA
DC current gain	G _I	V _O = 5V, I _O = 10mA	80			
Input resistance	R _I		3.29	4.7	6.11	kΩ
Resistance ratio	R ₂ /R ₁		8	10	12	
Transition frequency	f _T	V _O = 5V, I _O = 10mA, f = 100MHz		250		MHz

Typical Rating and Characteristic Curves (ADTC143ZCA-HF)

Fig.1 - On Characteristics

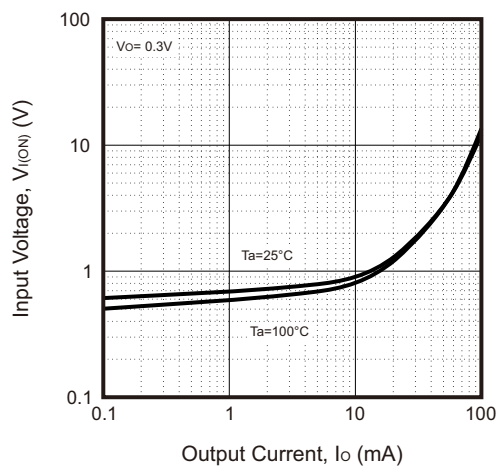


Fig.2 - Off Characteristics

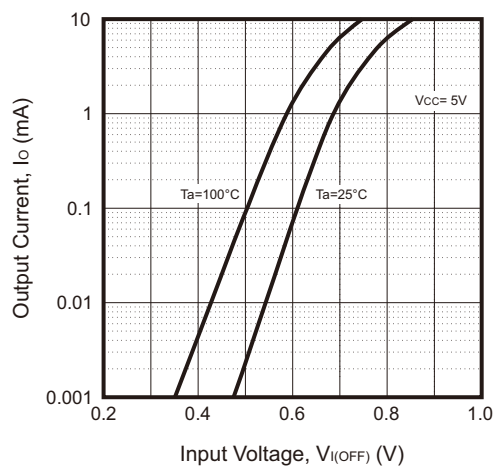


Fig.3 - G_I — I_o

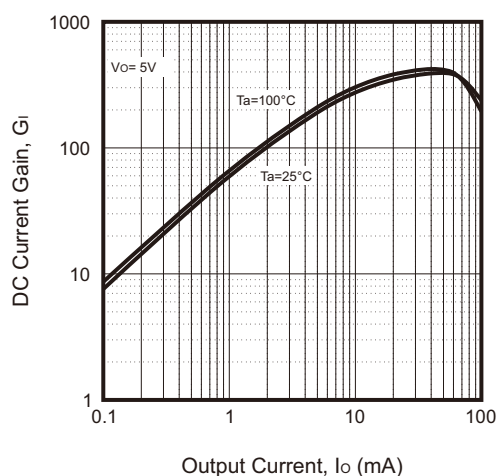


Fig.4 - $V_{O(ON)}$ — I_o

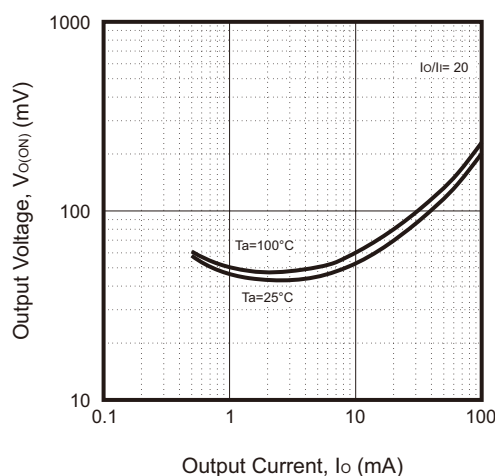


Fig.5 - C_o — V_R

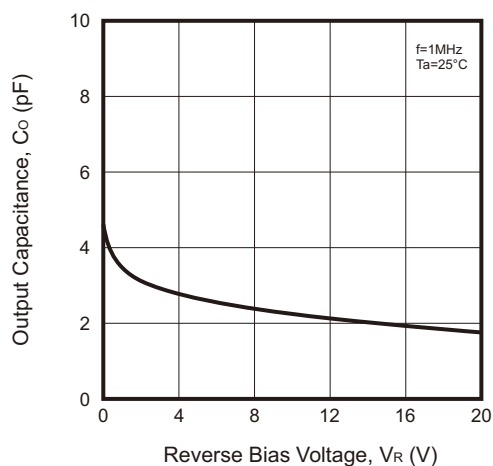
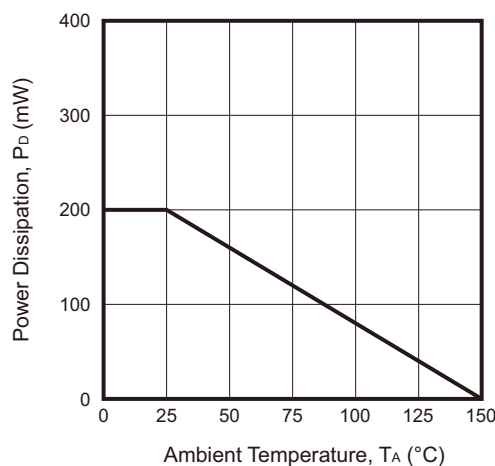
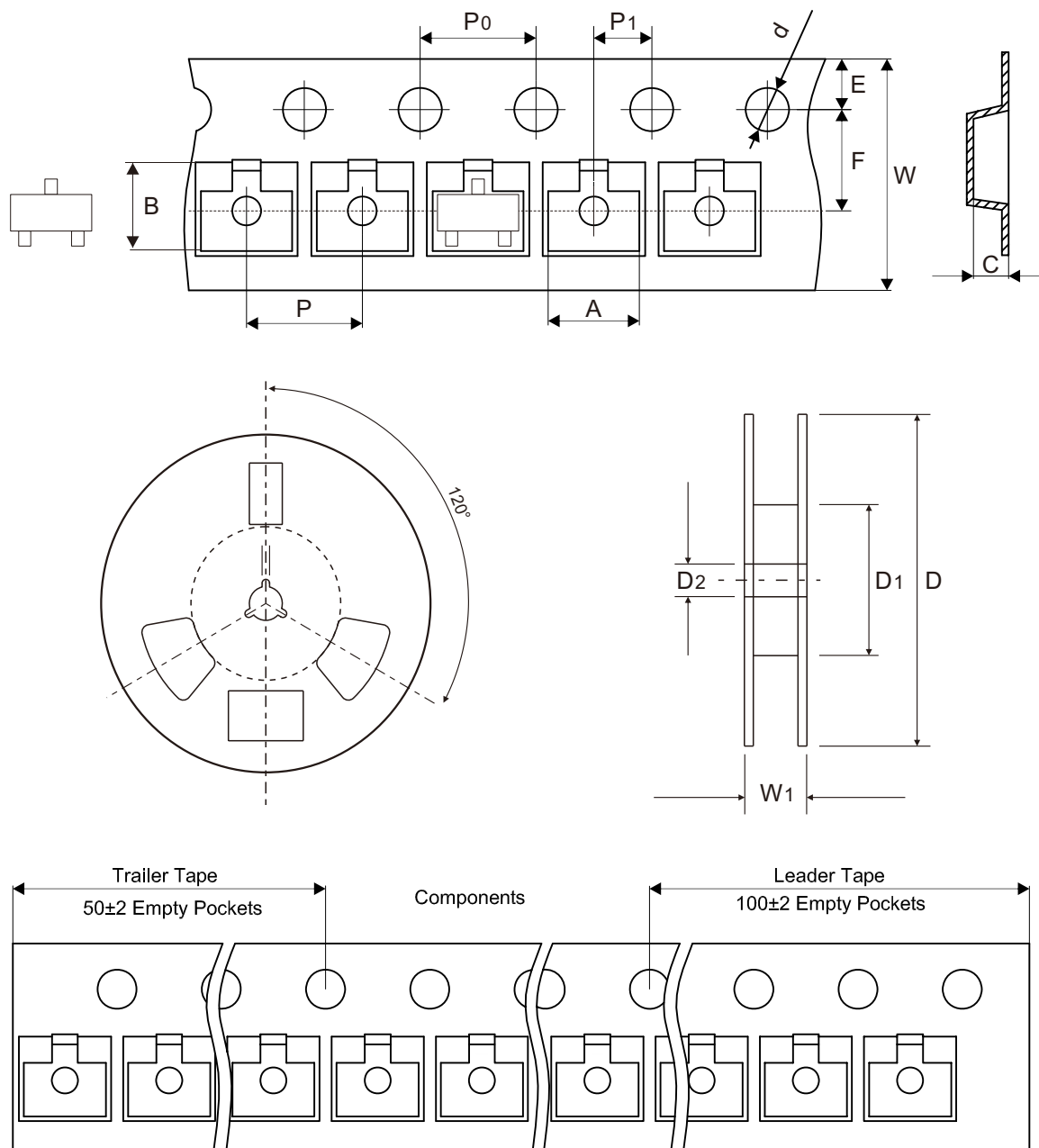


Fig.6 - P_D — T_A



Reel Taping Specification

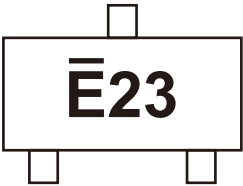


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.40 ± 0.40	13.00 ± 0.20
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.142 ± 0.016	0.512 ± 0.008

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.30 -0.10	12.10 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 ± 0.012 -0.004	0.476 ± 0.039

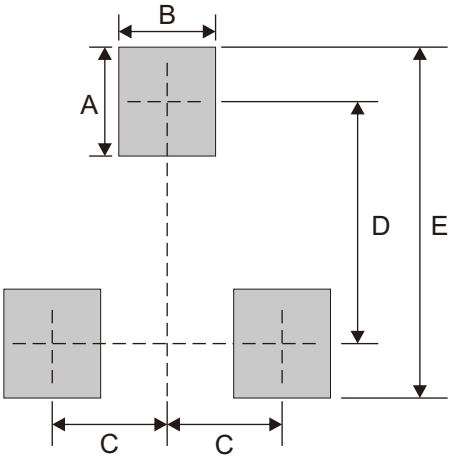
Marking Code

Part Number	Marking Code
ADTC143ZCA-HF	E23



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7