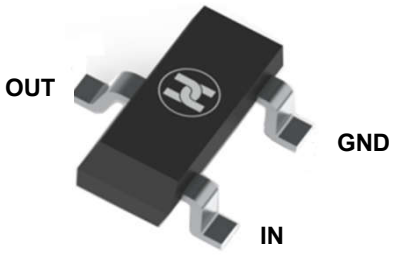
DIGITAL TRANSISTORS(BUILT-IN RESISTORS,NPN)

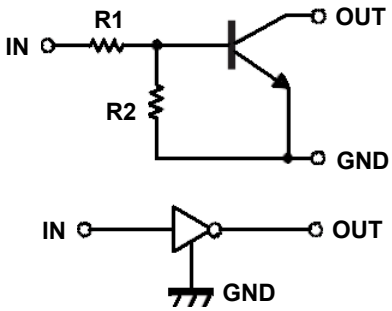
FEATURES

- 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.



SOT-523

EQUIVALENT CIRCUIT



MECHANICAL DATA

- Case: SOT-523
- Case material: Molded plastic. UL flammability 94V-0
- Terminals: Finish tin. Plated leads solderable per MIL-STD-202, method 208
- Weight:0.002grams(approximate)

Marking: 26

MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10 ~ +40	
Output current	I_O	30	mA
Peak collector current	I_{CM}	100	
Power dissipation	P_D	150	mW
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 ~ +150	

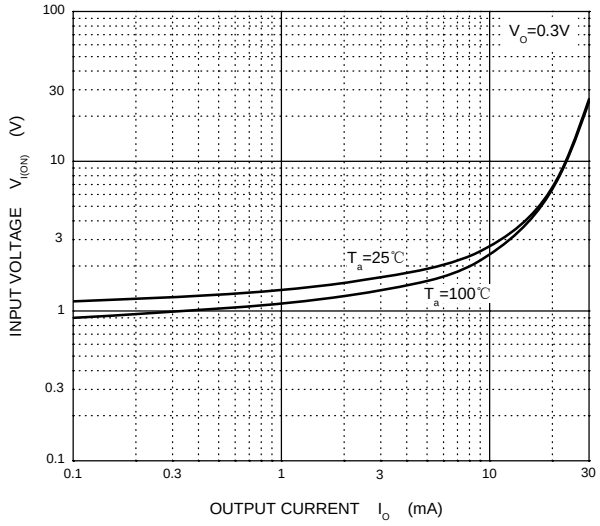
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V,I_O=100μA
	$V_{I(on)}$			3		V_O=0.3V,I_O=2mA
Output voltage	$V_{O(on)}$			0.3		I_O/I_I=10mA/0.5mA
Input current	I_I			0.18	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V,V_I=0
DC current gain	G_I	68				V_O=5V,I_O=5mA
Input resistance	R1	32.9	47	61.1	kΩ	
Resistance ratio	R2/R1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	V_O=10V,I_O=5mA,f=100MHz

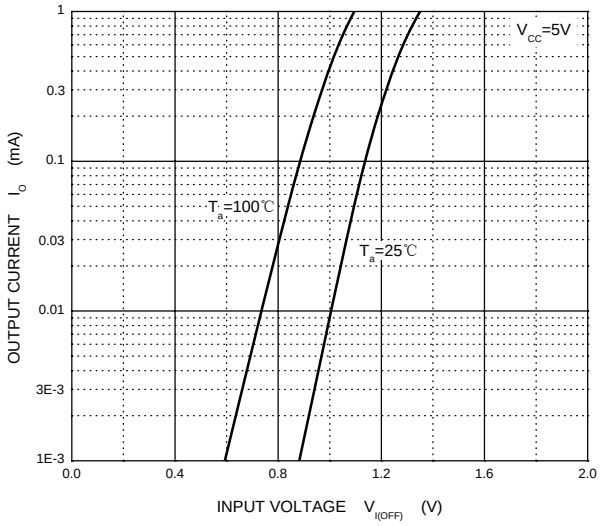
DIGITAL TRANSISTORS(BUILT-IN RESISTORS,NPN)

TYPICAL CHARACTERISTICS

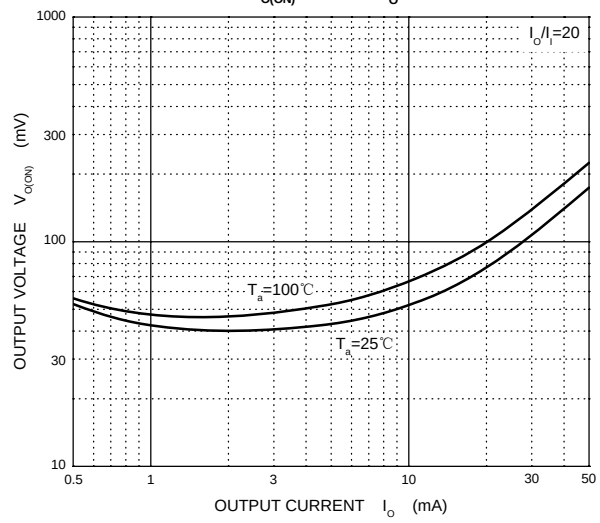
ON Characteristics



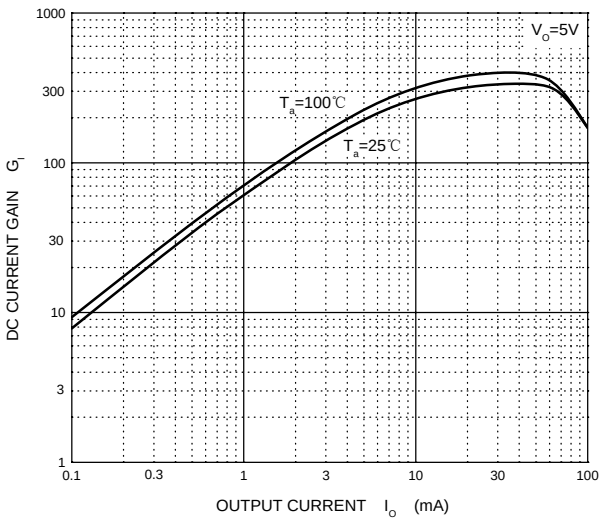
OFF Characteristics



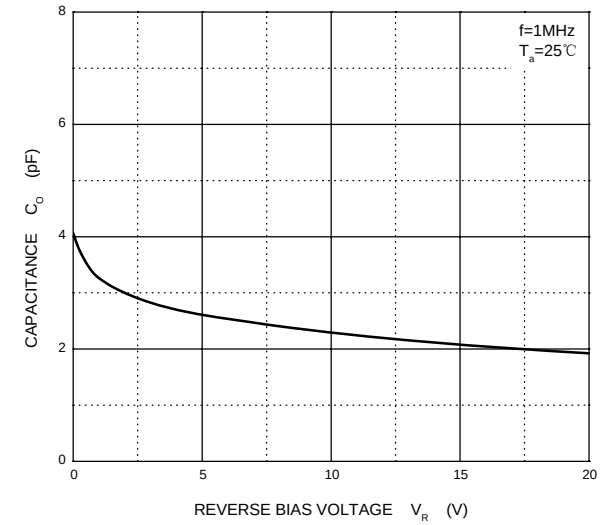
$V_{O(ON)}$ —— I_O



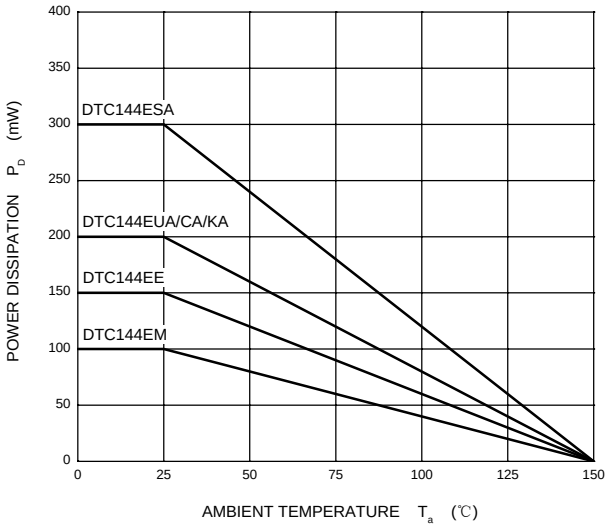
G_I —— I_O



C_O —— V_R

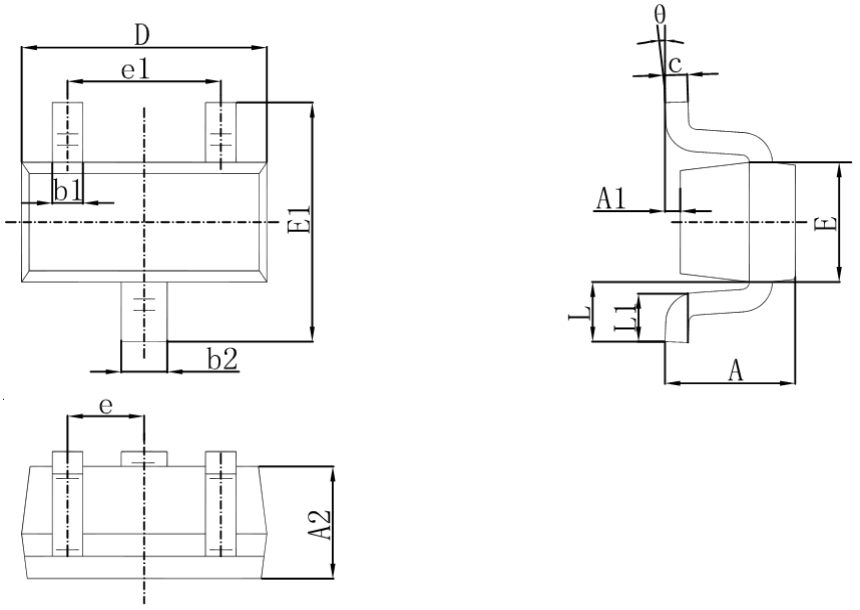


P_D —— T_a



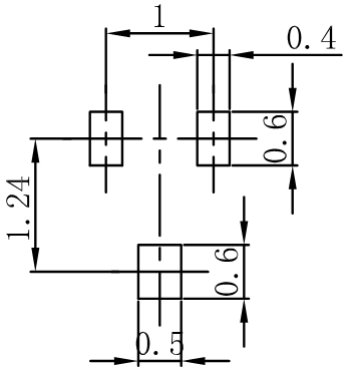
DIGITAL TRANSISTORS(BUILT-IN RESISTORS,NPN)

SOT-523 PACKAGE OUTLINE DIMENSION



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	0.069 069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.350	0.043
L	0.400 REF		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 SUGGESTED PAD LAYOUT



Note:

1.Controlling dimension: in millimeters

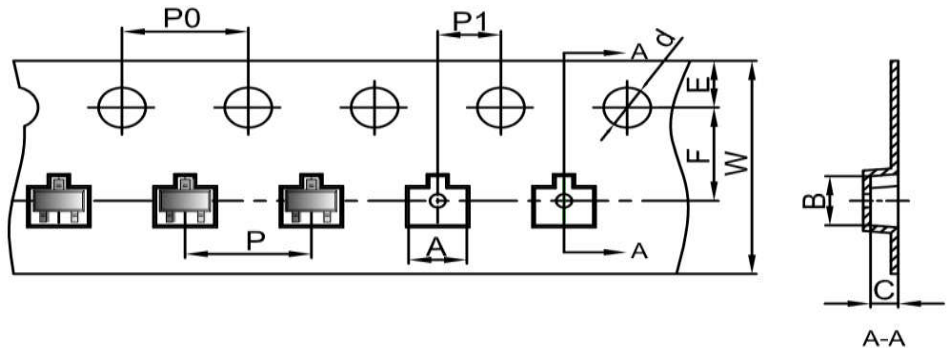
2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

DIGITAL TRANSISTORS(BUILT-IN RESISTORS,NPN)

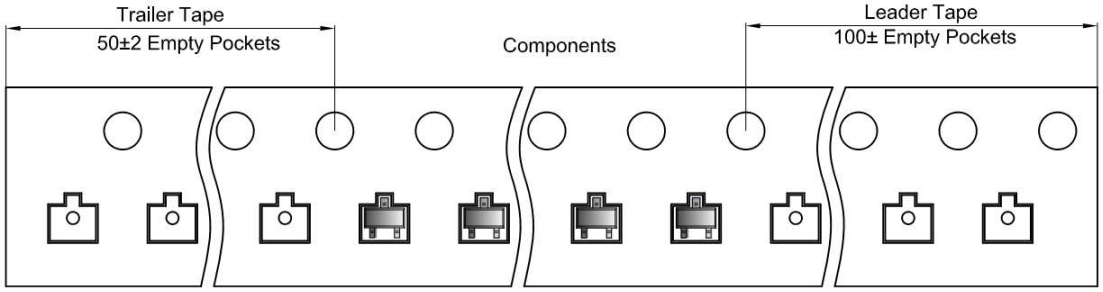
SOT-523 TAPE AND REEL

SOT-523 Embossed Carrier Tape

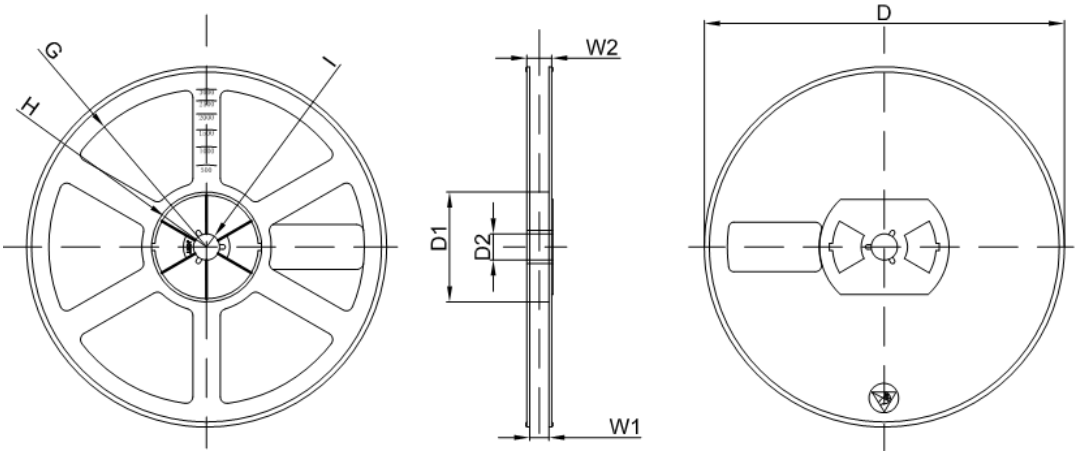


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-523 Tape Leader and Trailer



SOT-523 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7” DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30