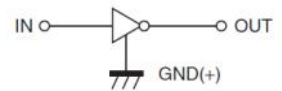
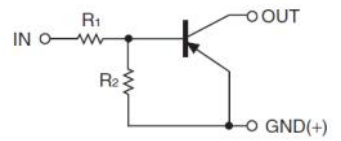




Digital Transistors (Built-in Resistors)

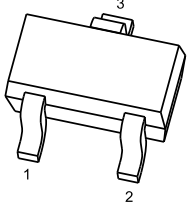
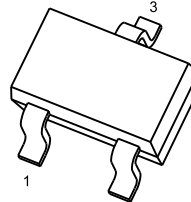
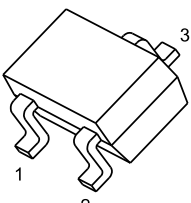
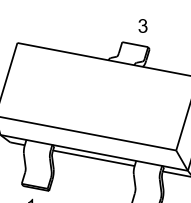
DIGITAL TRANSISTOR (PNP)



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 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

DTA144EE		SOT-523	DTA144EUA		SOT-323
MARKING:16		1. IN 2. GND 3. OUT	MARKING:16		1. IN 2. GND 3. OUT
DTA144EKA		SOT-23-3L	DTA144ECA		SOT-23
MARKING:16		1. IN 2. GND 3. OUT	MARKING:16		1. IN 2. GND 3. OUT



MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

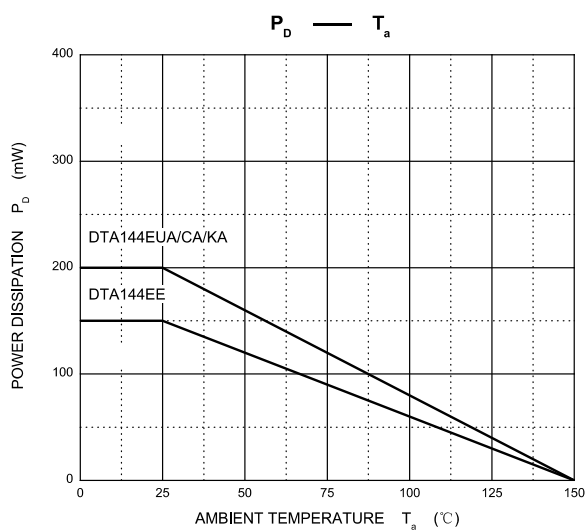
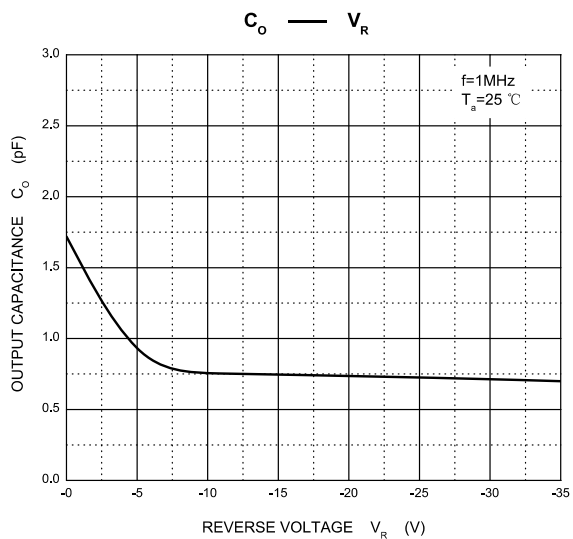
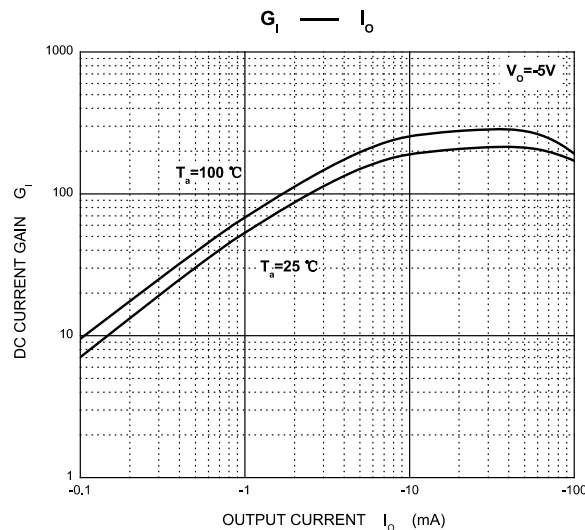
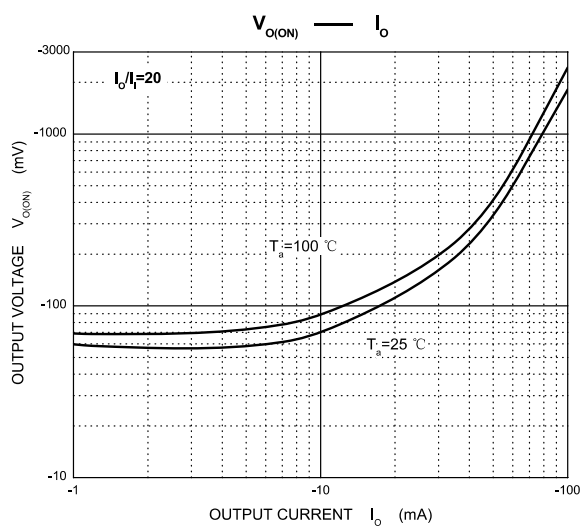
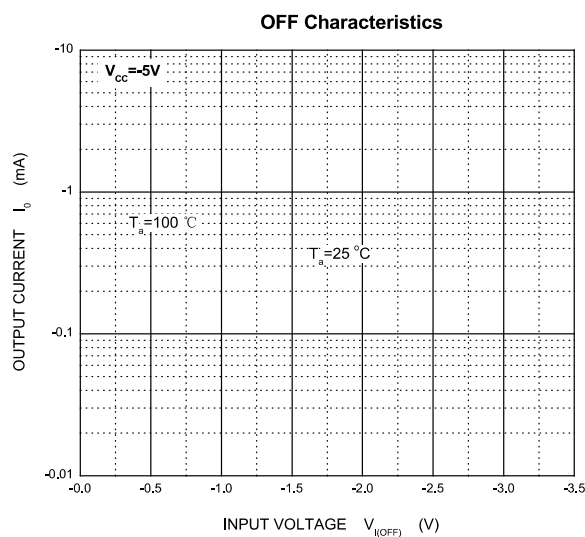
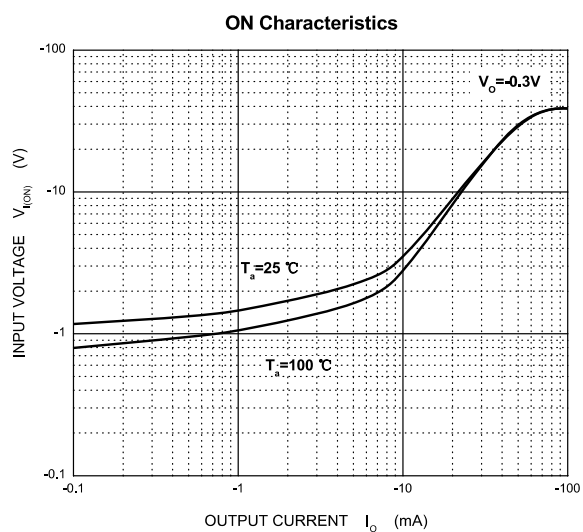
Symbol	Parameter	Limits(DTA144E□)				Unit
		E	UA	KA	CA	
V_{CC}	Supply Voltage	-50				V
V_{IN}	Input Voltage	-40~+10				V
I_O	Output Current	-30				mA
I_{CM}	Peak Collector Current	-100				mA
P_D	Power Dissipation	150	200	200	200	mW
T_j	Junction Temperature	150				$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150				$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC}=-5V, I_O=-100\mu A$	-0.5			V
	$V_{I(on)}$	$V_O=-0.3V, I_O=-2\text{ mA}$			-3	V
Output voltage	$V_{O(on)}$	$I_O/I_I=-10\text{mA}/-0.5\text{mA}$			-0.3	V
Input current	I_I	$V_I=-5V$			-0.18	mA
Output current	$I_{O(off)}$	$V_{CC}=-50V, V_I=0$			-0.5	μA
DC current gain	G_I	$V_O=-5V, I_O=-5\text{mA}$	68			
Input resistance	R_I		32.9	47	61.1	k Ω
Resistance ratio	R_2/R_1		0.8	1	1.2	
Transition frequency	f_T	$V_O=-10V, I_O=-5\text{mA}, f=100\text{MHz}$		250		MHz

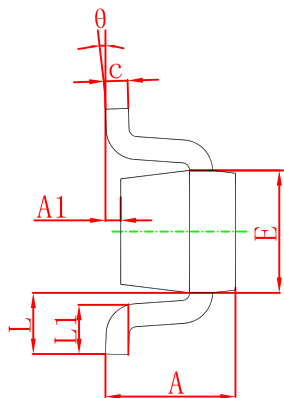
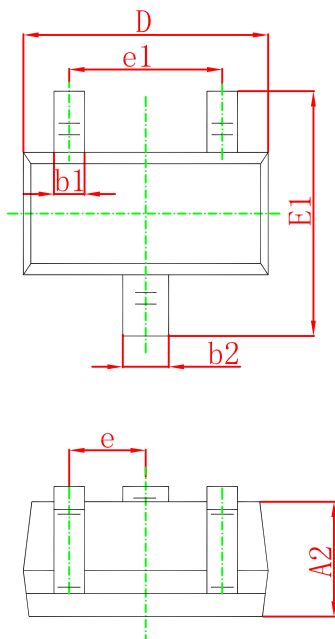


Typical Characteristics



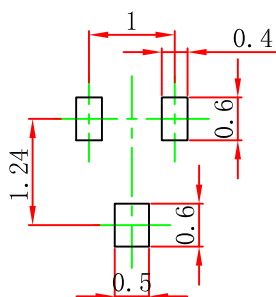


SOT-523 Package Outline Dimensions



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
θ	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.