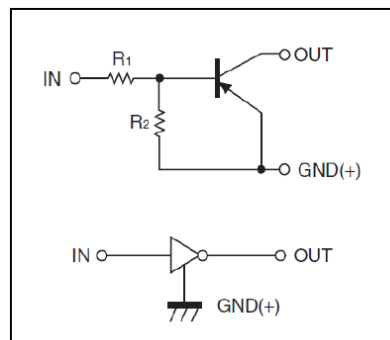


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## 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 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.

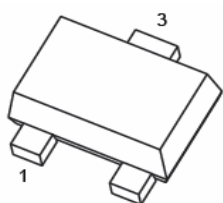
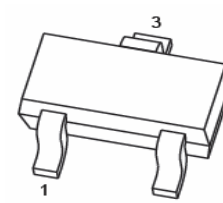
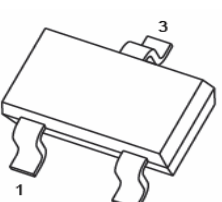
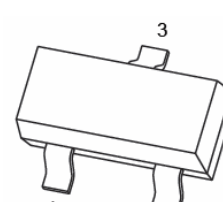
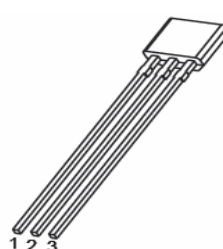
## EQUIVALENT CIRCUIT



## ORDER INFORMATION

Part Number	Type
DTA144E Series	Lead (Pb)-free
DTA144E Series-C	Lead (Pb)-free and Halogen-free

## PIN CONNENCTIONS AND MARKING

<p><b>DTA144EM</b></p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-723 MARKING:16</p>	<p><b>DTA144EE</b></p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-523 MARKING:16</p>
<p><b>DTA144EUA</b></p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-323 MARKING:16</p>	<p><b>DTA144ECA</b></p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-23 MARKING:16</p>
<p><b>DTA144ESA</b></p> <p>1. IN 2. GND 3. OUT</p>  <p>TO-92S MARKING: <span style="border: 1px solid black; padding: 2px;">A144 E000</span> <span style="border: 1px solid black; padding: 2px;">□ = Production Line Indication</span></p>	

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

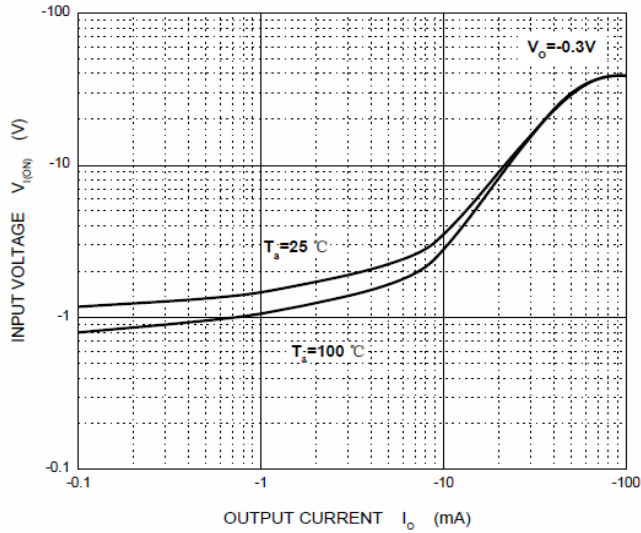
Parameter	Symbol	Limits (DTA144E□)					Unit
		M	E	UA	CA	SA	
Supply Voltage	$V_{CC}$	-50					V
Input Voltage	$V_{IN}$	-40~10					
Output Current	$I_O$	-30					mA
Peak Collector Current	$I_C$	-100					
Power Dissipation	$P_D$	100	150	200	300	mW	
Junction & Storage Temperature	$T_J, T_{STG}$	150, -55~150					$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

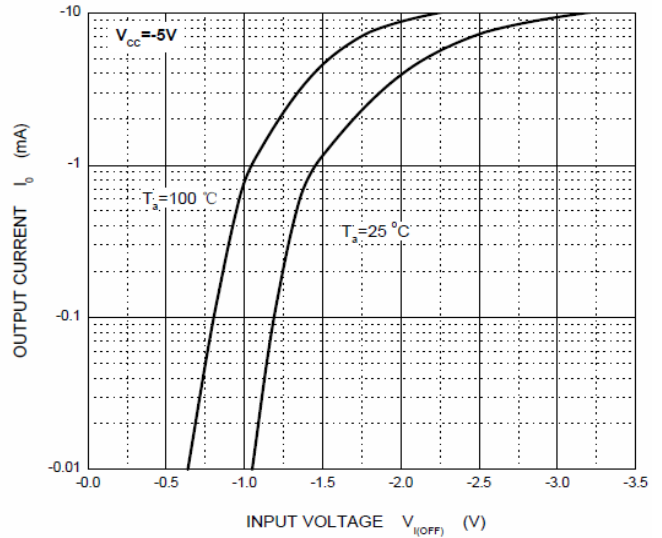
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	$V_{I(off)}$	-0.5	-	-	V	$V_{CC} = -5V, I_O = -100\mu\text{A}$
	$V_{I(on)}$	-	-	-3		$V_O = -0.3V, I_O = -2\text{mA}$
Output Voltage	$V_{O(on)}$	-	-	-0.3	V	$I_O/I_I = -10\text{mA} / -0.5\text{mA}$
Input Current	$I_I$	-	-	-0.18	mA	$V_I = -5V$
Output Current	$I_{O(off)}$	-	-	-0.5	$\mu\text{A}$	$V_{CC} = -50V, V_I = 0$
DC Current Gain	$G_I$	68	-	-		$V_O = -5V, I_O = -5\text{mA}$
Input Resistance	$R_1$	32.9	47	61.1	k $\Omega$	
Resistance Ratio	$R_2 / R_1$	0.8	1	1.2		
Transition Frequency	$f_T$	-	250	-	MHz	$V_O = -10V, I_O = -5\text{mA}, f = 100\text{MHz}$

**CHARACTERISTIC CURVES**

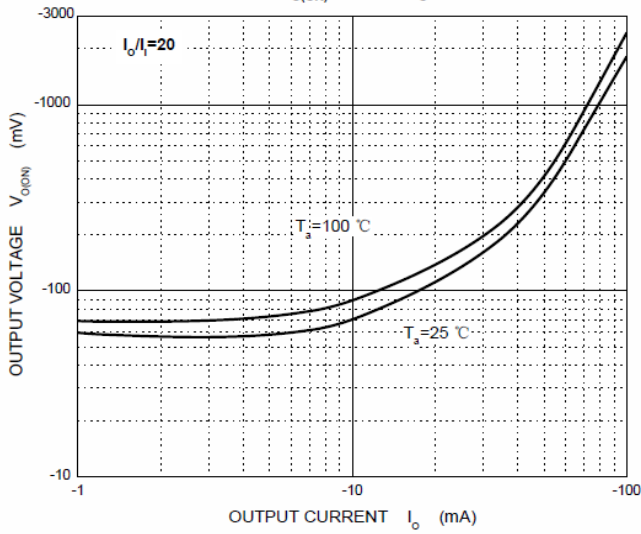
**ON Characteristics**



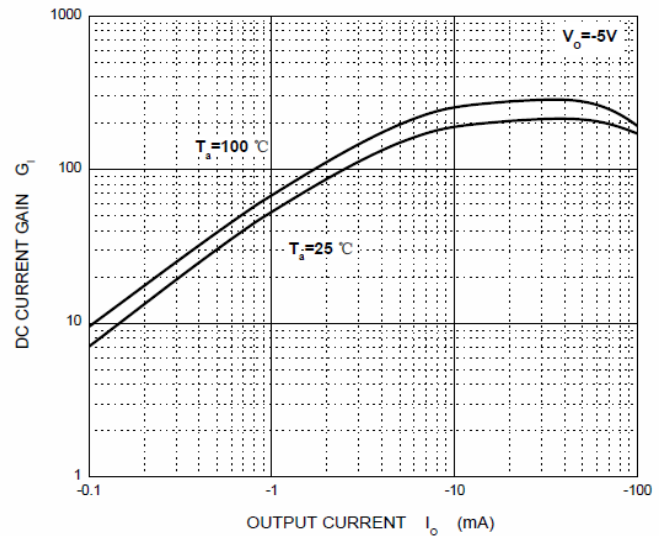
**OFF Characteristics**



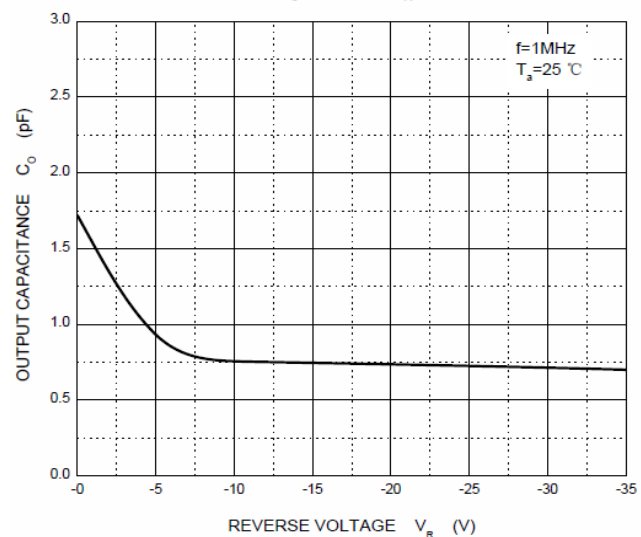
$V_{O(ON)}$  —  $I_O$



$G_I$  —  $I_O$



$C_O$  —  $V_R$



$P_D$  —  $T_a$

