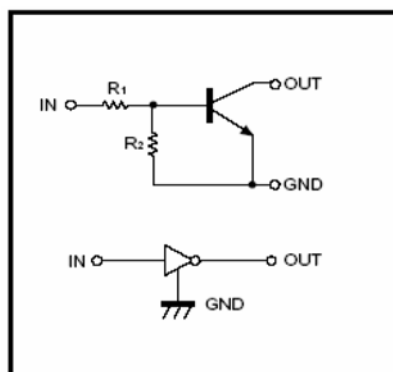


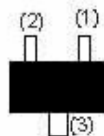
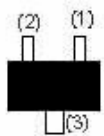
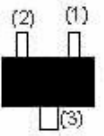
RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## 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



<u>DTA123YE (SOT-523)</u>	<u>DTA123YUA (SOT-323)</u>
 <p>1.IN 2.GND 3.OUT</p> <p>Abbreviated symbol : 52</p>	 <p>1.IN 2.GND 3.OUT</p> <p>Abbreviated symbol : 52</p>
<u>DTA123YCA (SOT-23)</u>	
 <p>1.IN 2.GND 3.OUT</p> <p>Abbreviated symbol : 52</p>	

## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Limits (DTA123Y□)			Unit
		E	UA	CA	
Collector-Base Voltage	V <sub>CC</sub>	-50			V
Input voltage	V <sub>IN</sub>	-12~5			V
Output current	I <sub>O</sub>	-100			mA
	I <sub>C(MAX)</sub>	-100			
Power dissipation	P <sub>D</sub>	150	200		mW
Junction & Storage temperature	T <sub>J</sub> , T <sub>STG</sub>	150, -55~150			°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Input voltage	$V_{I(off)}$	-	-	-0.3	V	$V_{CC} = -5\text{V}, I_O = -100\mu\text{A}$
	$V_{I(on)}$	-3	-	-		$V_O = -0.3\text{V}, I_O = -20\text{mA}$
Output voltage	$V_{O(on)}$	-	-	-0.3	V	$I_O / I_I = -10\text{mA} / -0.5\text{mA}$
Input current	$I_I$	-	-	-3.8	mA	$V_I = -5\text{V}$
Output current	$I_{O(off)}$	-	-	-0.5	$\mu\text{A}$	$V_{CC} = -50\text{V}, V_I = 0$
DC current gain	$G_I$	33	-	-		$V_O = -5\text{V}, I_O = -10\text{mA}$
Input resistance	$R_1$	1.54	2.2	2.86	K $\Omega$	
Resistance ratio	$R_2/R_1$	3.6	4.5	5.5		
Transition frequency	$f_T$	-	250	-	MHz	$V_O = -10\text{V}, I_O = 5\text{mA}, f = 100\text{MHz}$

**CHARACTERISTIC CURVES**

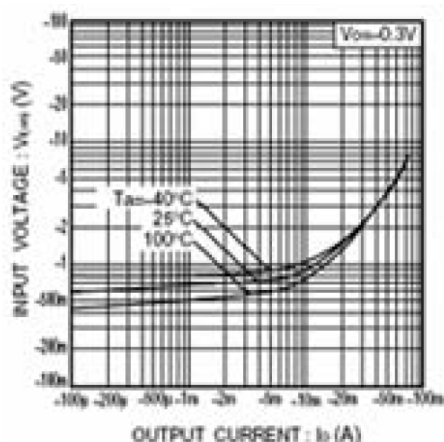


Fig.1 Input voltage vs. output current (ON characteristics)

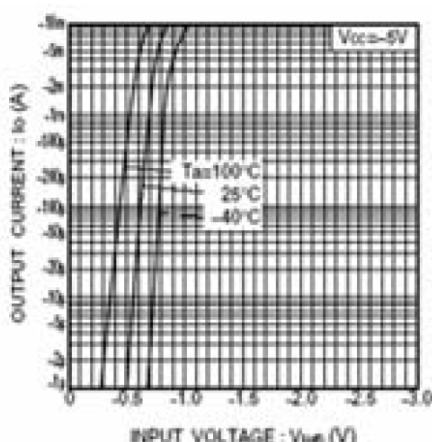


Fig.2 Output current vs. input voltage (OFF characteristics)

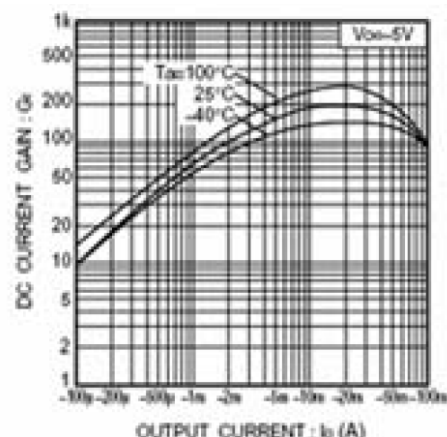


Fig.3 DC current gain vs. output current

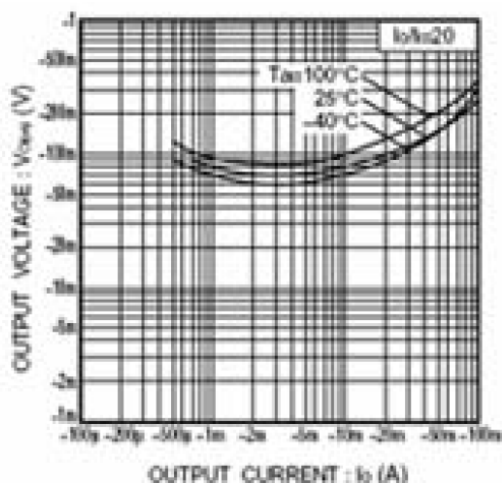


Fig.4 Output voltage vs. output current