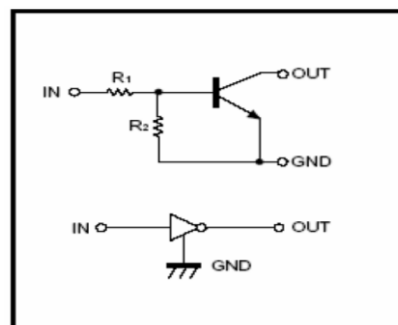


RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

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.

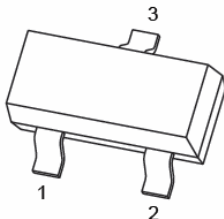
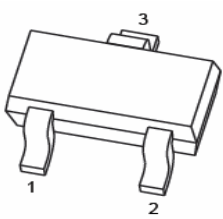
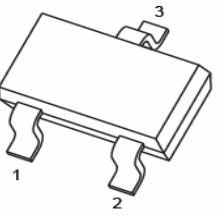
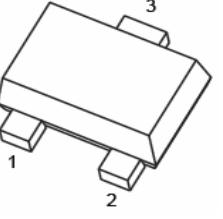
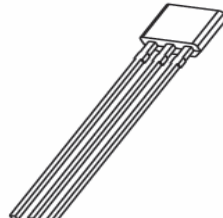
EQUIVALENT CIRCUIT



ORDER INFORMATION

Part Number	Type
DTC114Y Series	Lead (Pb)-free
DTC114Y Series-C	Lead (Pb)-free and Halogen-free

PIN CONNENCTIONS AND MARKING

<p>DTC114YCA</p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-23 MARKING:64</p>	<p>DTC114YE</p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-523 MARKING:64</p>
<p>DTC114YUA</p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-323 MARKING:64</p>	<p>DTC114YM</p> <p>1. IN 2. GND 3. OUT</p>  <p>SOT-723 MARKING:64</p>
<p>DTC114YSA</p> <p>4. IN 5. GND 6. OUT</p>  <p>TO-92S MARKING: C144 Y□□□ ← □ = Production Line Indication</p>	

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

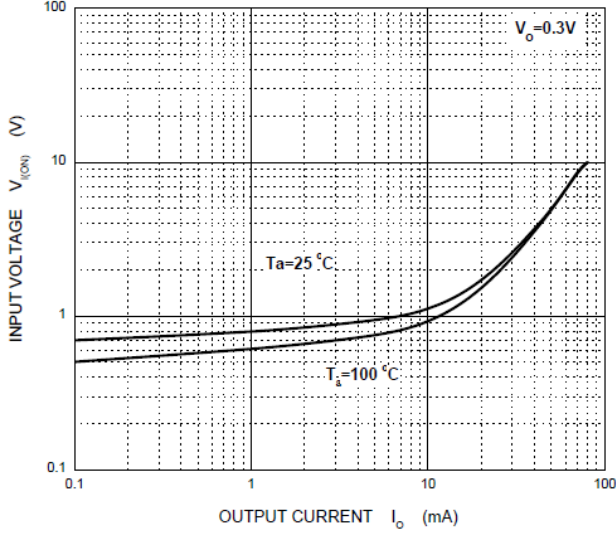
Parameter	Symbol	Limits (DTC114Y□)					Unit
		M	E	UA	CA	SA	
Supply Voltage	V_{CC}	50					V
Input Voltage	V_{IN}	-6~40					V
Output Current	I_O	70					mA
Peak Collector Current	I_C	100					
Power Dissipation	P_D	100	150	200	300	mW	
Junction & Storage Temperature	T_J, T_{STG}	150, -55~150					$^\circ\text{C}$

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

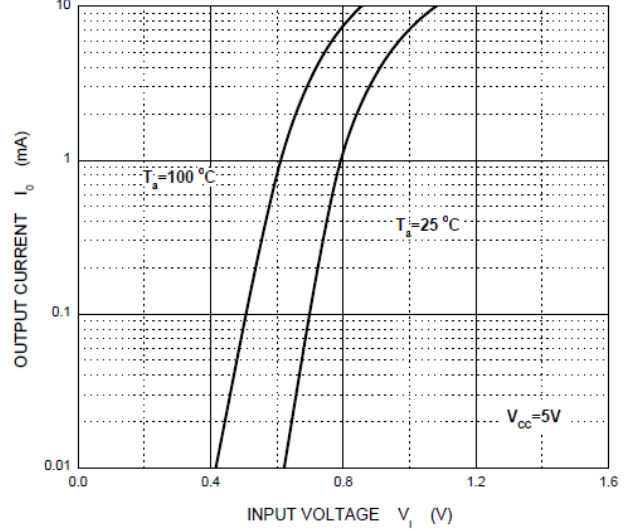
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Input Voltage	$V_{I(off)}$	0.3	-	-	V	$V_{CC}=5V, I_O=100\mu\text{A}$
	$V_{I(on)}$	-	-	1.4		$V_O=0.3V, I_O=1\text{mA}$
Output Voltage	$V_{O(on)}$	-	-	0.3	V	$I_O/I_I=5\text{mA}/0.25\text{mA}$
Input Current	I_I	-	-	0.88	mA	$V_I=5V$
Output Current	$I_{O(off)}$	-	-	0.5	μA	$V_{CC}=50V, V_I=0$
DC Current Gain	G_I	68	-	-		$V_O=5V, I_O=5\text{mA}$
Input Resistance	R_1	7	10	13	k Ω	
Resistance Ratio	R_2/R_1	3.7	4.7	5.7		
Transition Frequency	f_T	-	250	-	MHz	$V_O=10V, I_O=5\text{mA}, f=100\text{MHz}$

CHARACTERISTIC CURVES

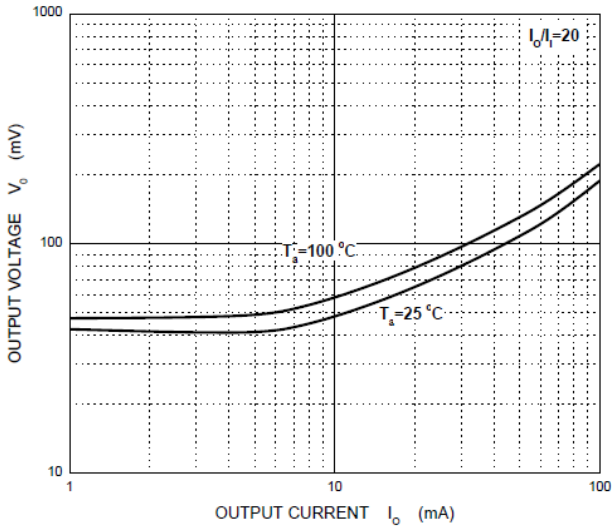
ON Characteristics



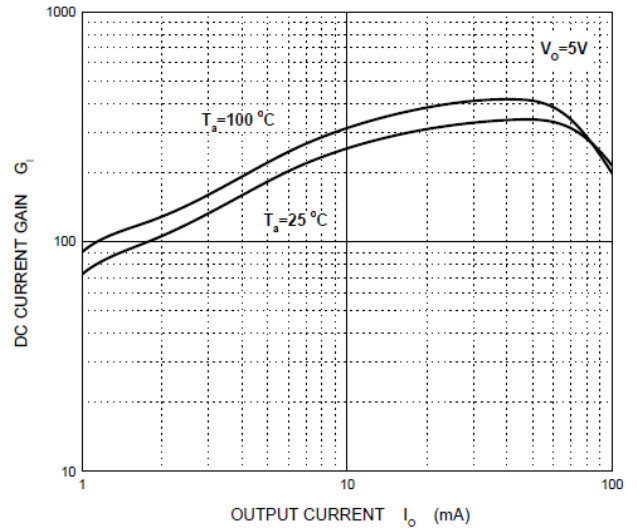
OFF Characteristics



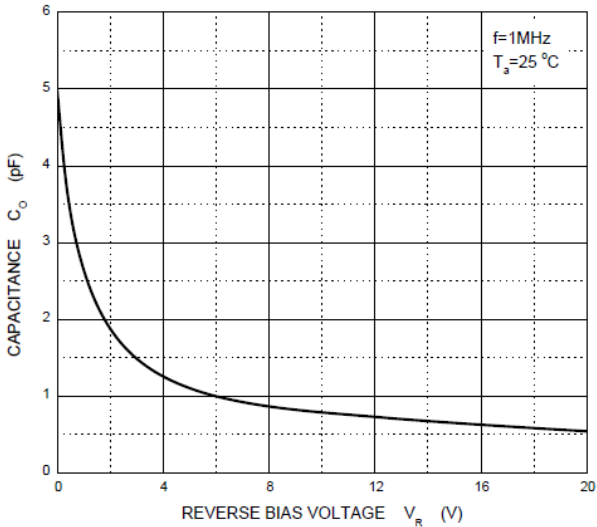
V_o — I_o



G_i — I_o



C_o — V_R



P_D — T_a

