Elektronische Bauelemente

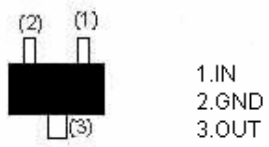
DTC114YE / DTC114YUA
DTC114YCA / DTC114YSA
NPN Digital Transistors (Built-in Resistors)

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.

DTC114YE (SOT-523)

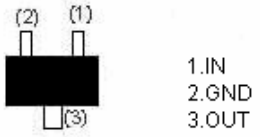


Addreviated symbol：64

DTC114YUA (SOT-323)

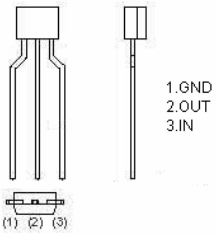
Addreviated symbol：64

DTC114YCA (SOT-23)

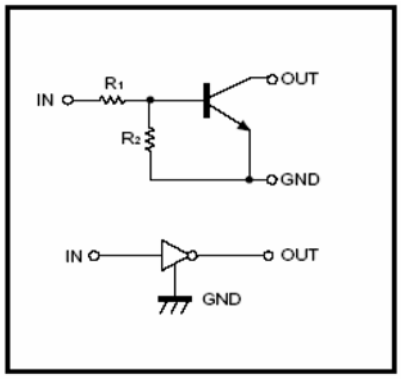


Addreviated symbol：64

DTC114YSA (TO-92S)



EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Limits (DTC1114Y□)				Unit
		E	UA	CA	SA	
Collector-Base Voltage	V_{CC}	50				V
Input voltage	V_{IN}	-6~40				V
Output current	I_O	70				mA
	$I_{C(MAX)}$	100				
Power dissipation	P_D	150	200		300	mW
Junction & Storage temperature	T_J, T_{STG}	150, -55~150				°C

ELECTRICAL CHARACTERISTICS (T_A=25°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=100μA
	$V_{I(on)}$	1.4	-	-		V_O=0.3V, I_O=1mA
Output voltage	$V_{O(on)}$	-	-	0.3	V	I_O/I_I=5mA/0.25mA
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=5mA
Input resistance	R_1	7	10	13	KΩ	
Resistance ratio	R_2 / R_1	3.7	4.7	5.7		
Transition frequency	f_T	-	250	-	MHz	V_O=10V, I_O=5mA, f=100MHz

CHARACTERISTIC CURVES

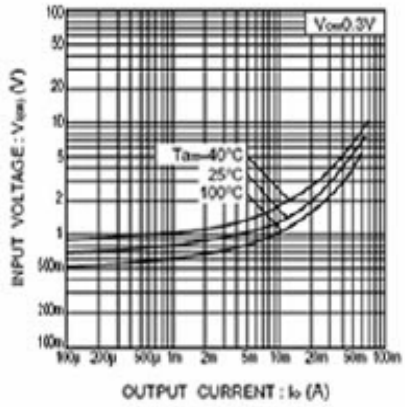


Fig.1 Input voltage vs. output current (ON characteristics)

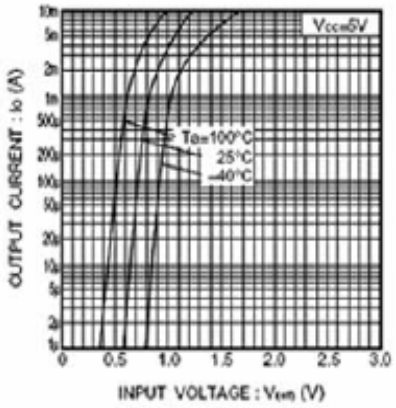


Fig.2 Output current vs. input voltage (OFF characteristics)

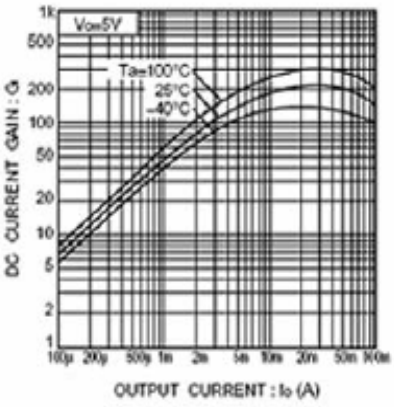


Fig.3 DC current gain vs. output current

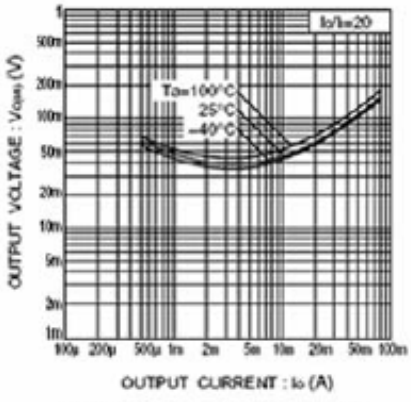


Fig.4 Output voltage vs. output current