Elektronische Bauelemente

DTA114YE / DTA114YUA / DTA114YSA / DTA114YCA

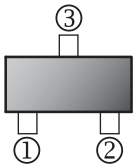
PNP Digital Transistors (Built-in Resistors)

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

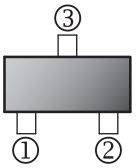
FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting input resistors (see equivalent circuit).
- Only the on/off conditions need to be set for operation, making device design easy.
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.

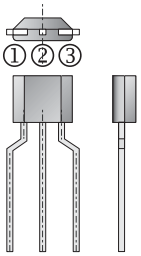
DTA114YE (SOT-523)
①: In
②: Gnd
③: Out



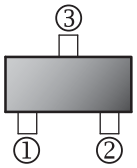
DTA114YUA (SOT-323)
①: In
②: Gnd
③: Out



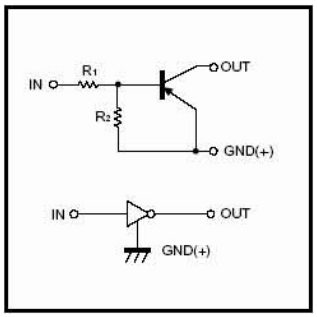
DTA114YSA (TO-92S)
①: In
②: Out
③: Gnd



DTA114YCA (SOT-23)
①: In
②: Gnd
③: Out



EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS at Ta = 25°C

Parameter	Symbol	Ratings				Unit
		E	UA	CA	SA	
Supply voltage	V_{CC}	-50				V
Input voltage	V_{IN}	-40 ~ +6				V
Output current	I_O	-70				mA
	$I_{C(MAX)}$	-100				
Power dissipation	P_C	150	200		300	mW
Junction & Storage temperature	T_J, T_{STG}	150, -55~150				℃

ABSOLUTE MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS at Ta = 25°C

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

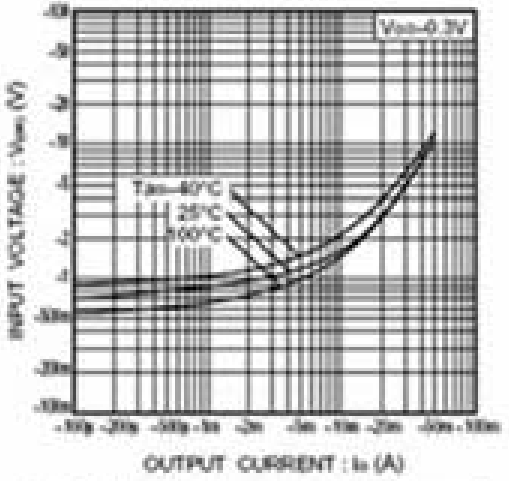


Fig.1 Input voltage vs. output current (ON characteristics)

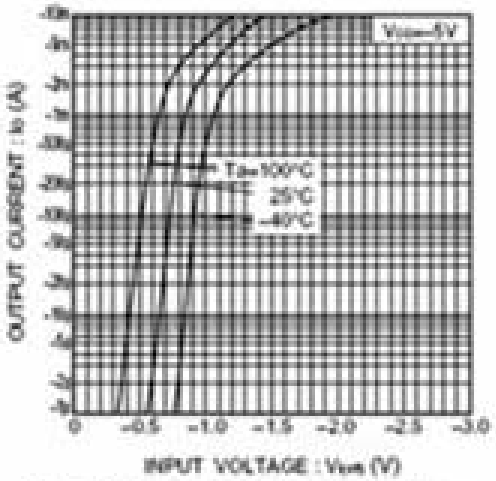


Fig.2 Output current vs. input voltage (OFF characteristics)

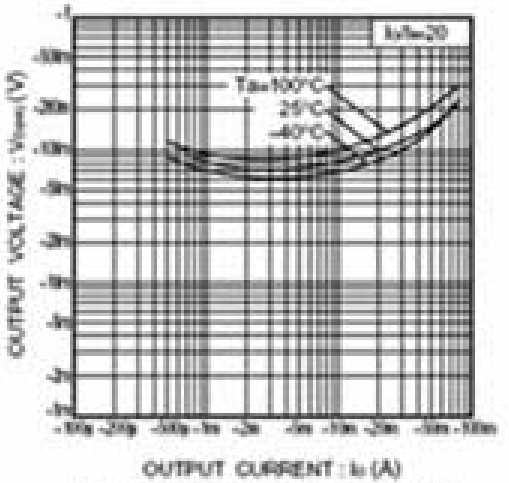


Fig.4 Output voltage vs. output current

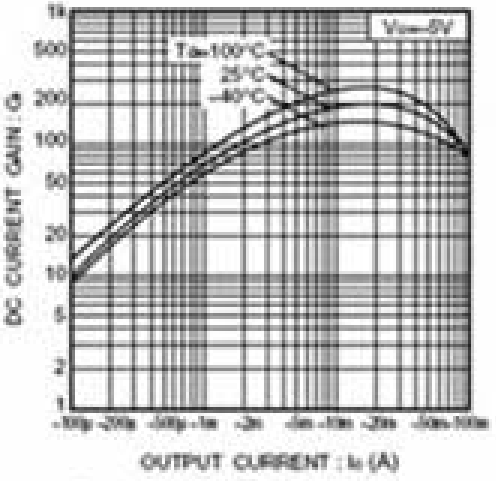


Fig.3 DC current gain vs. output current