JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

Digital transistors (built-in resistors)

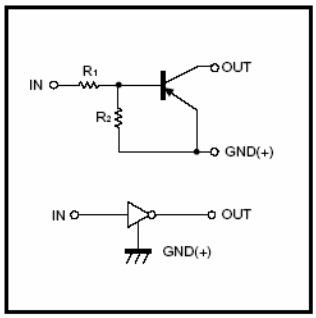
DTA114YE/DTA114YUA/DTA114YKA/ DTA114YSA/DTA114YCA

DIGITAL TRANSISTOR (PNP)

FEATURES

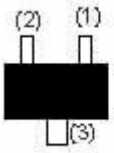
1. Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit).
2. The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely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

●Equivalent circuit



PIN CONNENCTIONS AND MARKING

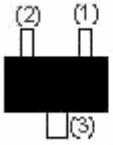
DTA114YE



1.IN
2.GND
3.OUT

SOT-523 Addreviated symbol: 54

DTA114YUA

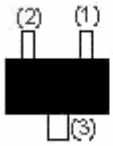


1.IN
2.GND
3.OUT

SOT-323

Addreviated symbol: 54

DTA114YKA

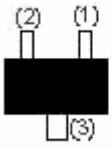


1.IN
2.GND
3.OUT

SOT-23-3L

Addreviated symbol: 54

DTA114YCA

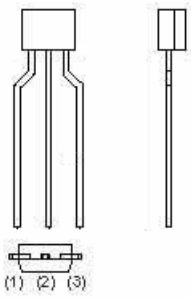


1.IN
2.GND
3.OUT

SOT-23

Addreviated symbol: 54

DTA114YSA



1.GND
2.OUT
3.IN

TO-92S

Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Limits (DTA114Y□)					Unit
		E	UA	KA	CA	SA	
Supply voltage	V_{CC}	-50					V
Input voltage	V_{IN}	-40to+6					V
Output current	I_O	-70					mA
	$I_{C(Max.)}$	-100					mA
Power dissipation	P_C	150	200			300	mW
Junction temperature	Tj	150					℃
Storage temperature	Tstg	-55 to+ 150					℃

Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	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

Typical Characteristics

●**Electrical characteristic curves**

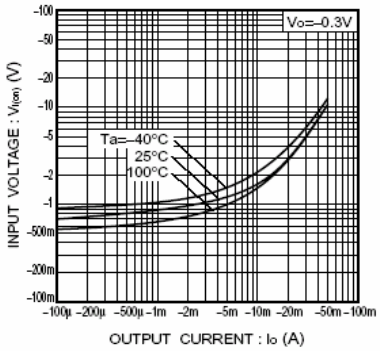


Fig.1 Input voltage vs. output current (ON characteristics)

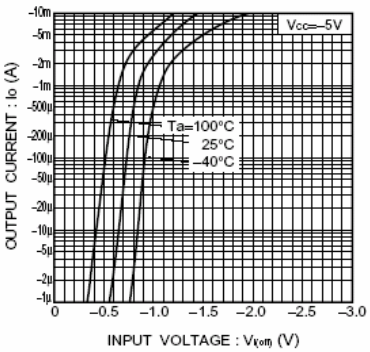


Fig.2 Output current vs. input voltage (OFF characteristics)

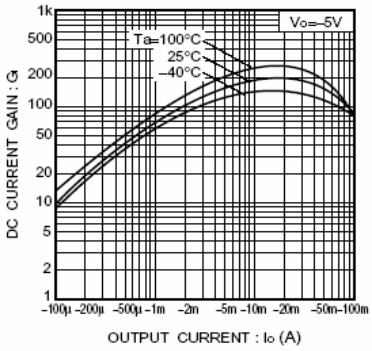


Fig.3 DC current gain vs. output current

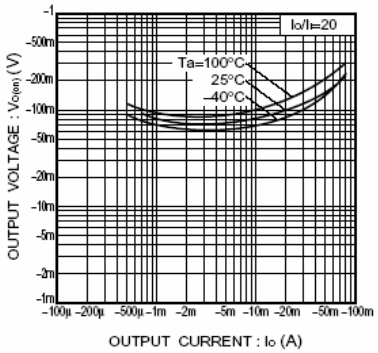


Fig.4 Output voltage vs. output current