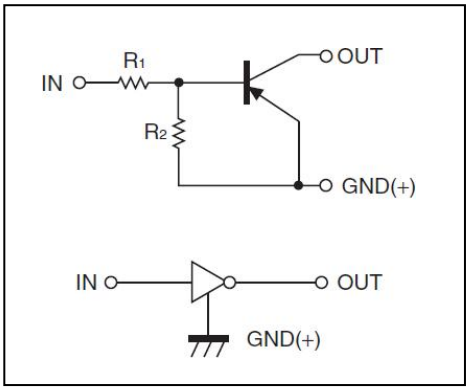
Digital Transistors (Built-in Resistors)

• Equivalent Circuit



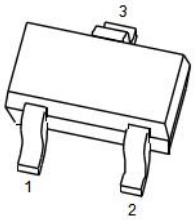
DIGITAL TRANSISTOR (PNP)

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 negative 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

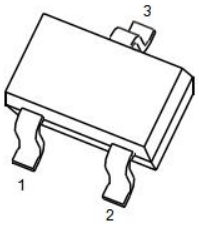
PIN CONNENCTIONS and MARKING

DTA114YE — **SOT-523**



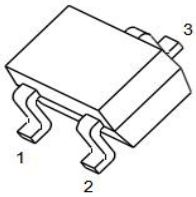
1. IN
2. GND
3. OUT

DTA114YUA — **SOT-323**



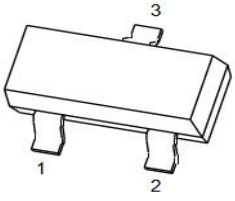
1. IN
2. GND
3. OUT

DTA114YKA — **SOT-23-3L**



1. IN
2. GND
3. OUT

DTA114YCA — **SOT-23**



1. IN
2. GND
3. OUT

ORDERING INFORMATION

Part Number	MARKING	Package	Packing Method	Pack Quantity
DTA114YE	**54**	SOT-523	Reel	3000pcs/Reel
DTA114YUA	**54**	SOT-323	Reel	3000pcs/Reel
DTA11YKA	**54**	SOT-23-3L	Reel	3000pcs/Reel
DTA114YCA	**54**	SOT-23	Reel	3000pcs/Reel

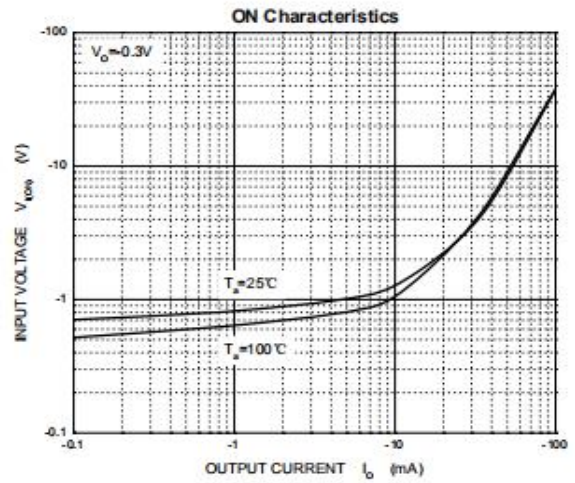
MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

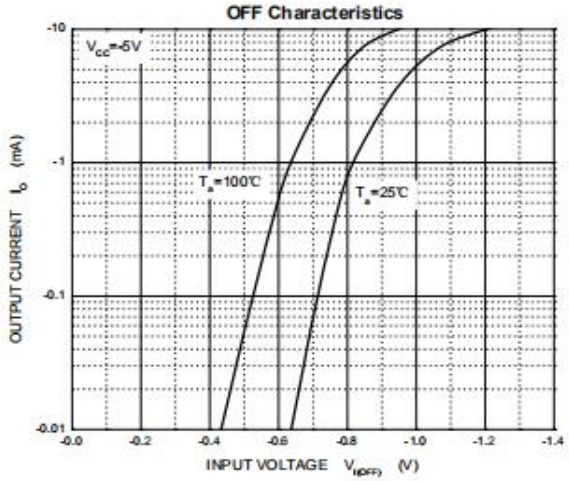
Symbol	Parameter	Limits(DTA114Y)						Unit
		M	E	UA	KA	CA	SA	
V_{CC}	Supply Voltage	-50						V
V_{IN}	Input Voltage	-40～+6						V
I_O	Output Current	-70						mA
I_{CM}	Peak Collector Current	-100						mA
P_D	Power Dissipation	100	150	200	200	200	300	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150						℃

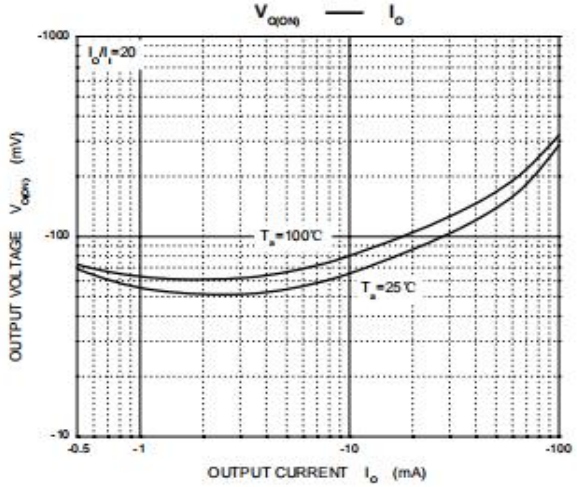
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

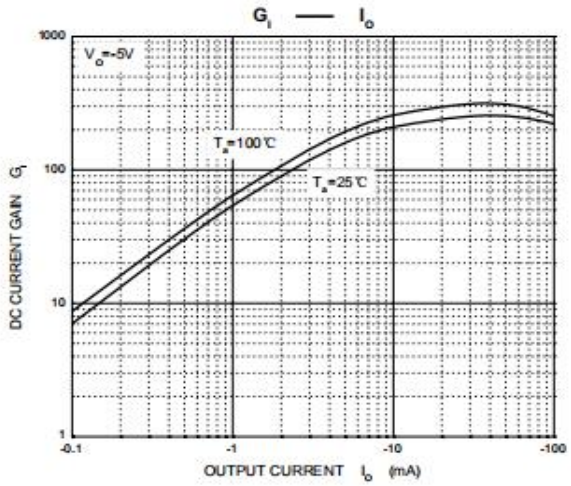
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=-5V,I_O=-100μA	-0.3			V
	$V_{I(on)}$	V_O=-0.3V,I_O=-1 mA			-1.4	V
Output voltage	$V_{O(on)}$	I_O/I_I=-5mA/-0.25mA			-0.3	V
Input current	I_I	V_I=-5V			-0.88	mA
Output current	$I_{O(off)}$	V_{CC}=-50V,V_I=0			-0.5	μA
DC current gain	G_I	V_O=-5V,I_O=-5mA	68			z
Input resistance	R_1		7	10	13	kΩ
Resistance ratio	R_2/R_1		3.7	4.7	5.7	
Transition frequency	f_T	V_O=-10V,I_O=-5mA,f=100MHz		250		MH

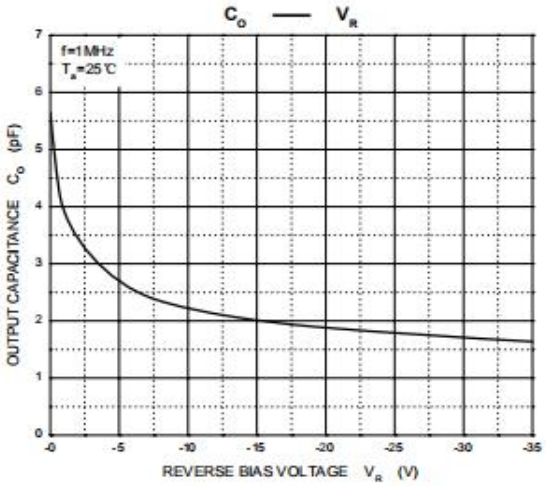
Typical Characteristics

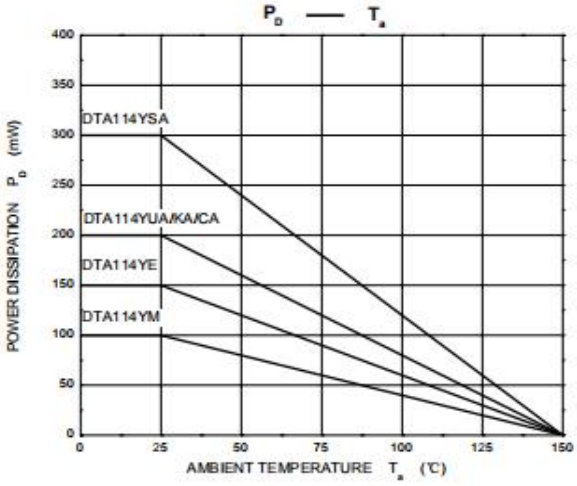












REVERSE VOLTAGE V_R (V) AMBIENT TEMPERATURE T_a (℃)