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[DTD133HKT146](#)

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DTD133H□

Transistors

Digital transistors (Includes resistors)

DTD133H□

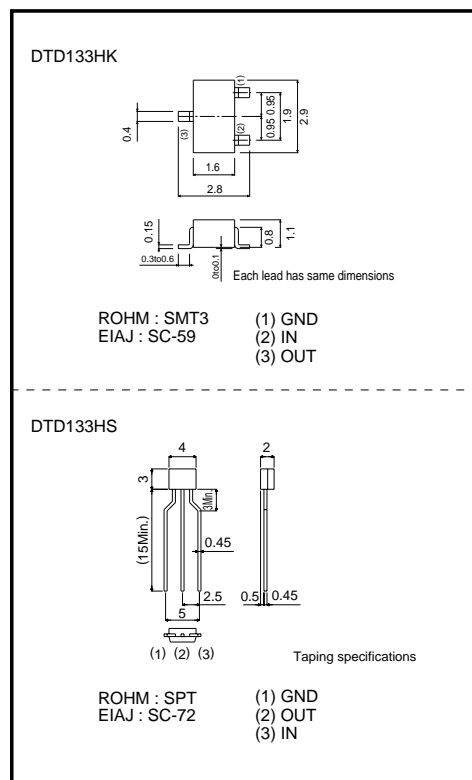
●Features

- 1) A built-in bias resistor allows inverter circuit configuration without external resistors for input (see equivalent circuit diagram).
- 2) The bias resistor consists of a thin-film resistor which is completely isolated, providing the capability to negative-bias the input, and avoiding parasitic effects.
- 3) Operation starts by simply setting On/Off conditions, simplifying the design of equipment using the transistors.
- 4) High packing density.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	Vcc	50	V
Input voltage	Vi	-6~+20	V
Output current	Ic	500	mA
Power dissipation	DTD133HK	200	mW
	DTD133HS	300	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55~+150	°C

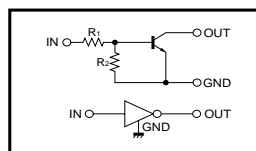
●External dimensions (Units : mm)



●Package, marking, and packaging specifications

Part No.	DTD133HK	DTD133HS
Package	SMT3	SPT
Marking	G08	-
Packaging code	T146	TP
Basic ordering unit (pieces)	3000	5000

●Equivalent circuit



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	Vi(off)	-	-	0.5	V	Vcc=5V, Io=100µA
	Vi(on)	2.0	-	-	V	Vo=0.3V, Io=20mA
Output voltage	Vo(on)	-	0.1	0.3	V	Ic=50mA, Ii=2.5mA
Input current	Ii	-	-	2.4	mA	Vi=5V
Output current	Ic(off)	-	-	0.5	µA	Vcc=50V, Vi=0V
DC current gain	Gi	56	-	-	-	Ic=50mA, Vo=5V
Input resistance	R1	-	3.3	-	kΩ	-
Resistance ratio	R2/R1	2.4	3.0	3.7	-	-
Transition frequency	fT	-	200	-	MHz	VCE=10V, IE=-5mA, f=100MHz *

*Transition frequency of the device.

DTD133H□

Transistors

●Electrical characteristics curves

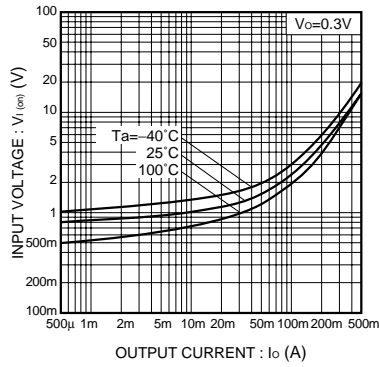


Fig.1 Input voltage vs. output current (ON characteristics)

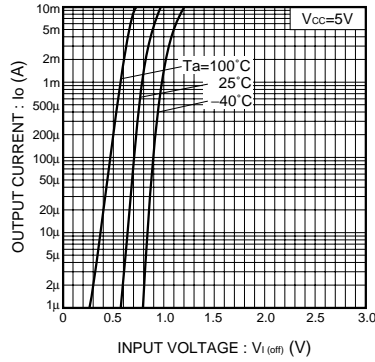


Fig.2 Output current vs. input voltage (OFF characteristics)

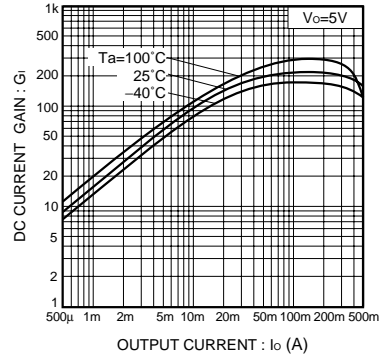


Fig.3 DC current gain vs. output current characteristics

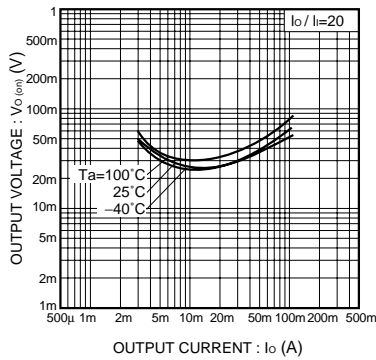


Fig.4 Output voltage vs. output current characteristics