

Digital transistors (built-in resistors)

DTB133HS

●Features

- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- 2) The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
- 3) Only the on/off conditions need to be set for operation, making device design easy.
- 4) Higher mounting densities can be achieved.

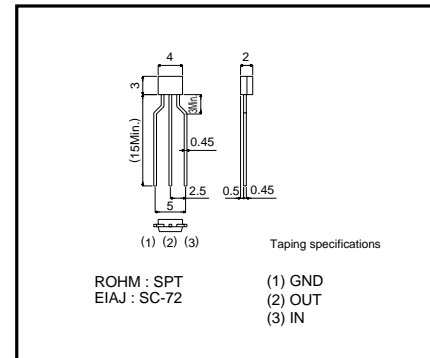
●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	-50	V
Input voltage	V _i	-20	V
		6	
Output current	I _c	-500	mA
Power dissipation	P _d	300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~+150	°C

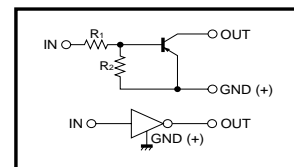
●Package, marking, and packaging specifications

Part No.	DTB133HS
Package	SPT
Marking	-
Packaging code	TP
Basic ordering unit (pieces)	5000

●External dimensions (Units : mm)



●Equivalent circuit



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{i(off)}	-	-	-0.3	V	V _{CC} =-5V, I _o =-100μA
	V _{i(on)}	-2	-	-		V _O =-0.3V, I _o =-20mA
Output voltage	V _{O(on)}	-	-0.1	-0.3	V	I _o =-50mA, I _i =-2.5mA
Input current	I _i	-	-	-2.4	mA	V _i =-5V
Output current	I _{O(off)}	-	-	-0.5	μA	V _{CC} =-50V, V _i =0V
DC current gain	G _i	56	-	-	-	I _o =-50mA, V _O =-5V
Input resistance	R ₁	2.31	3.3	4.29	kΩ	-
Resistance ratio	R ₂ /R ₁	2.4	3	3.7	-	-
Transition frequency	f _{tr}	-	200	-	MHz	V _{CE} =-10V, I _E =5mA, f=100MHz *

*Transition frequency of the device.