

TDTA114Y

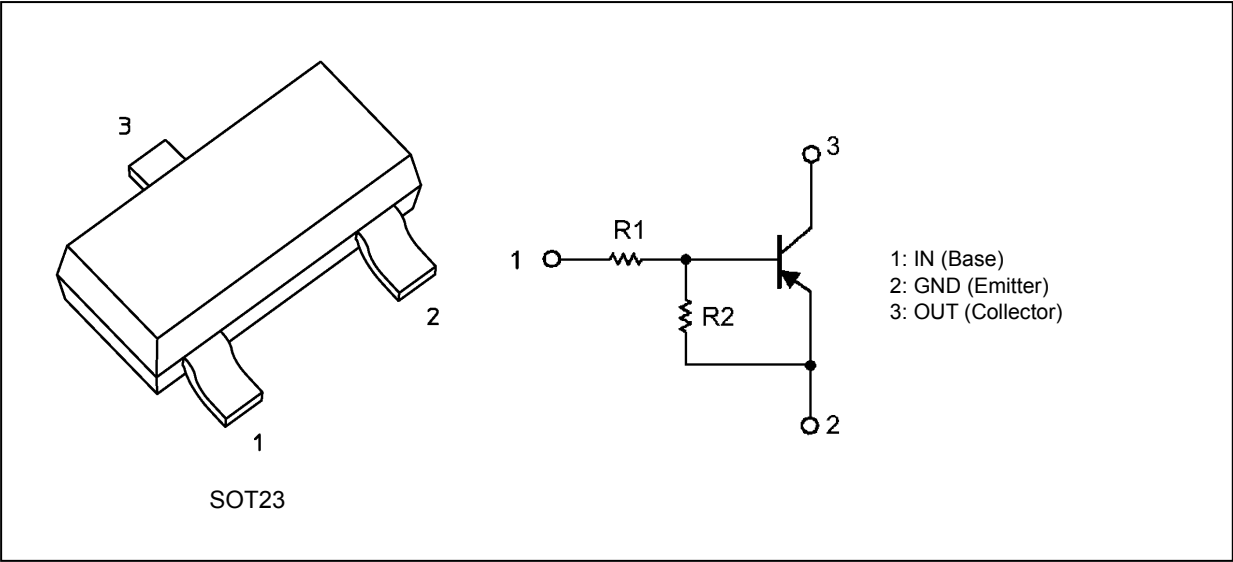
1. Applications

- Switching
- Inverter Circuits
- Driver Circuits

2. Features

- (1) The integrated bias resistor reduces the number of external parts required, making it possible to reduce system size and assembly time.
- (2) Toshiba offers transistors with a wide range of resistance to accommodate various circuit designs.
- (3) Complementary to TDTC114Y

3. Packaging and Internal Circuit



4. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25\text{ }^{\circ}\text{C}$)

Characteristics	Symbol	Rating	Unit
Supply voltage	V_{CC}	-50	V
Output current	I_O	-100	mA
Power dissipation	P_D	320	mW
Junction temperature	T_j	150	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55 to 150	$^{\circ}\text{C}$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

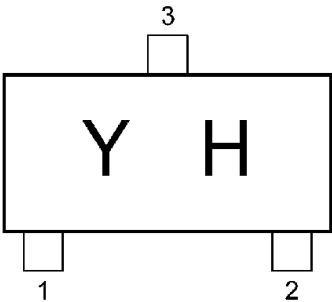
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Start of commercial production
2016-03

5. Electrical Characteristics (Unless otherwise specified, T_a = 25 °C)

Characteristics	Symbol	Note	Test Condition	Min	Typ.	Max	Unit
Input voltage (off)	V _{I(off)}		V _{CC} = -5 V, I _O = -0.1 mA	—	—	-0.5	V
Input voltage (on)	V _{I(on)}		V _O = -0.3 V, I _O = -1 mA	-1.1	—	—	V
Output voltage	V _{O(on)}		I _O = -10 mA, I _I = -0.5 mA	—	-0.1	-0.3	V
Input bias current	I _I		V _I = -5 V	—	—	-0.88	mA
Output current	I _{O(off)}		V _{CC} = -50 V, V _I = 0 V	—	—	-500	nA
DC current gain	G _I		V _O = -5 V, I _O = -5 mA	90	—	—	—
Input resistance	R _I		—	7	10	13	kΩ
Resistance ratio	R ₂ /R ₁		—	3.7	4.7	5.7	—
Transition frequency	f _T		V _{CE} = -10 V, I _E = 5 mA, f = 100 MHz	—	250	—	MHz

6. Marking



7. Characteristics Curves (Note)

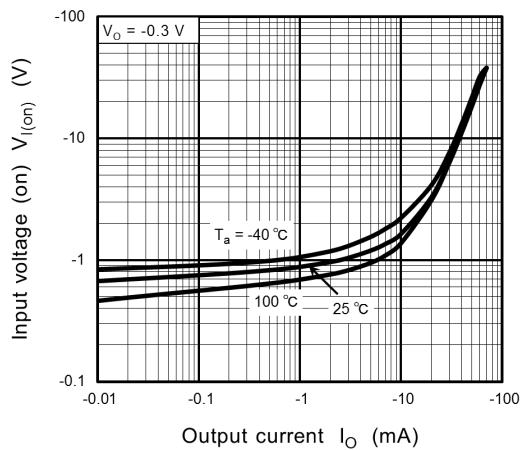


Fig. 7.1 V_{I(on)} - I_O

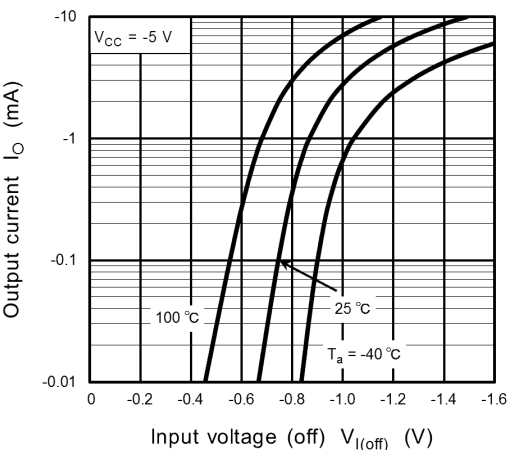


Fig. 7.2 I_O - V_{I(off)}

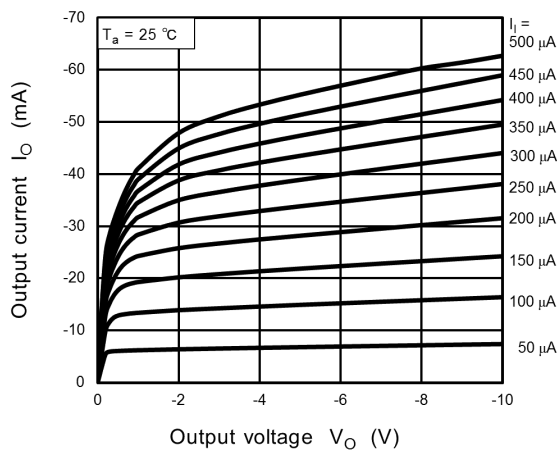


Fig. 7.3 I_O - V_O

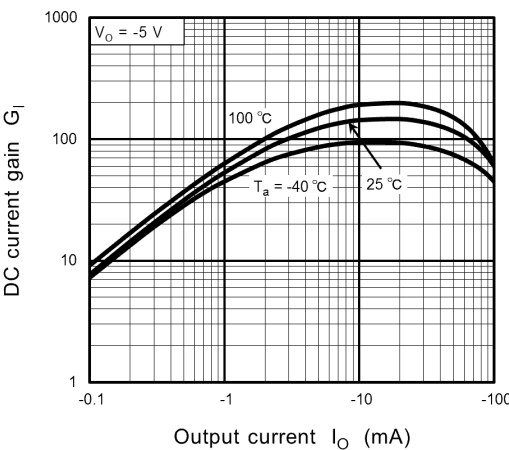


Fig. 7.4 G_I - I_O

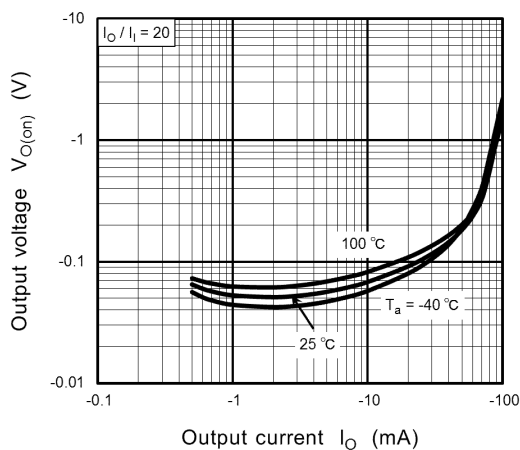


Fig. 7.5 V_{O(on)} - I_O

Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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