

## SOT-23 Plastic-Encapsulate Transistors

### Features

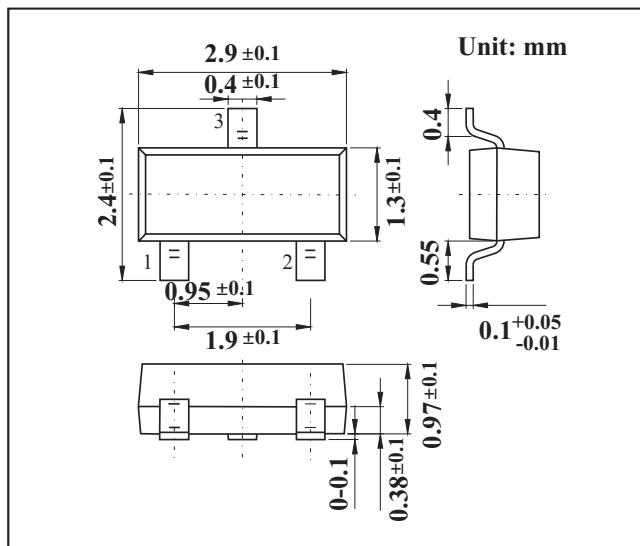
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- High packing density
- NPN Silicon Transistor

### Descriptions

- Switching application
- Interface circuit and driver circuit application

### MECHANICAL DATA

- Case: SOT-23 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Characteristic	Symbol	Rating	Unit
Output voltage	V <sub>O</sub>	50	V
Input voltage	V <sub>I</sub>	15,-5	V
Output current	I <sub>O</sub>	100	mA
Power dissipation	P <sub>D</sub>	200	mW
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-55 ~ 150	°C

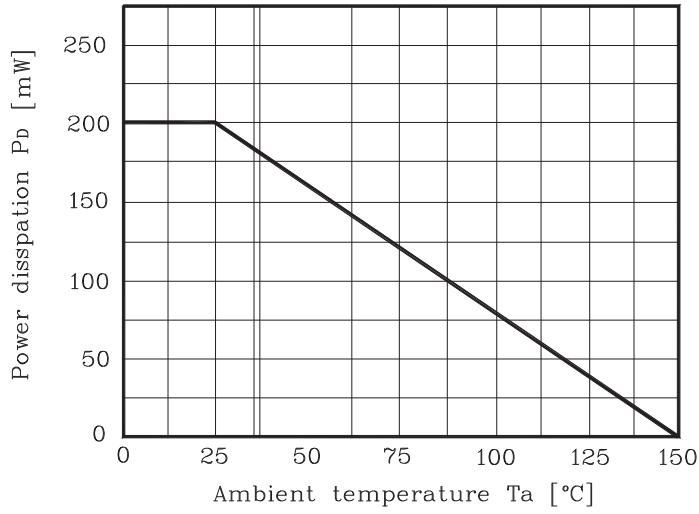
### Electrical Specification (T<sub>A</sub>=25°C unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output cut-off current	I <sub>O(OFF)</sub>	V <sub>O</sub> =50V, V <sub>I</sub> =0	-	-	500	nA
DC current gain	G <sub>I</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =10mA	80	200	-	-
Output voltage	V <sub>O(ON)</sub>	I <sub>O</sub> =10mA, I <sub>I</sub> =0.5mA	-	0.1	0.3	V
Input voltage (ON)	V <sub>I(ON)</sub>	V <sub>O</sub> =0.2V, I <sub>O</sub> =5mA	-	-	1.1	V
Input voltage (OFF)	V <sub>I(OFF)</sub>	V <sub>O</sub> =5V, I <sub>O</sub> =0.1mA	0.5	-	-	V
Transition frequency	f <sub>T</sub> *	V <sub>O</sub> =10V, I <sub>O</sub> =5mA, f=1MHz	-	200	-	MHz
Input current	I <sub>I</sub>	V <sub>I</sub> =5V, I <sub>O</sub> =0	-	-	3.6	mA
Input resistor (Input to base)	R <sub>1</sub>	-	1.54	2.2	2.86	KΩ
Input resistor (Base to common)	R <sub>2</sub>	-	33	47	61	KΩ

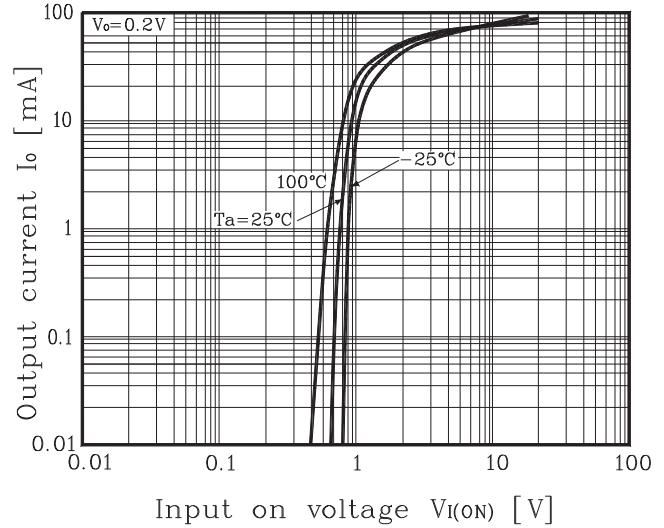
\* : Characteristic of transistor only

## RATINGS AND CHARACTERISTIC CURVES

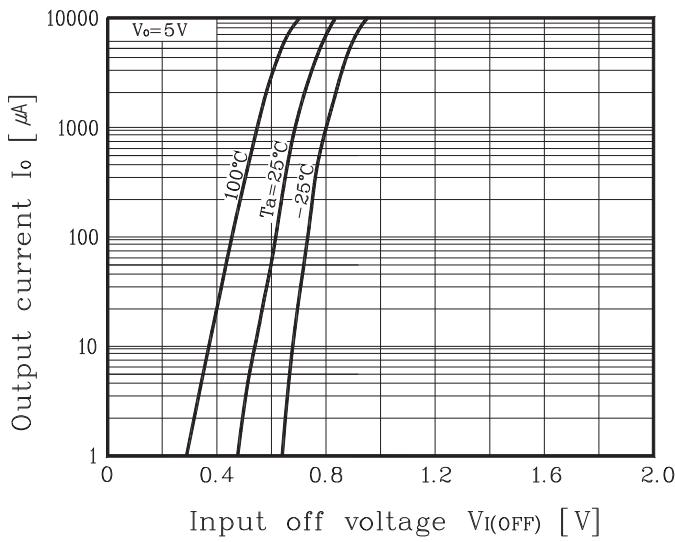
**Fig. 1  $P_D$  -  $T_a$**



**Fig. 2  $I_O$  -  $V_{I(ON)}$**



**Fig. 3  $I_O$  -  $V_{I(OFF)}$**



**Fig. 4  $G_I$  -  $I_O$**

