

SOT-523 Plastic-Encapsulate Transistors

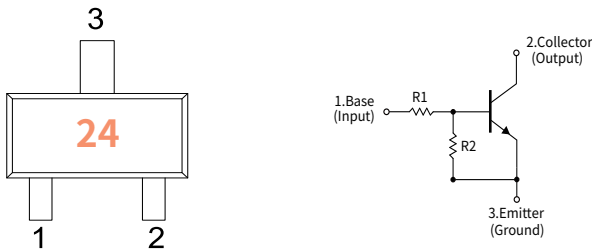
Features

- 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 positive 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

Mechanical Data

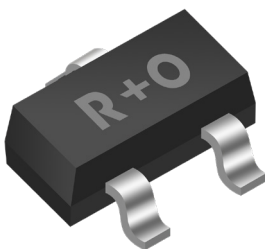
- Case: SOT-523
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Supply Voltage
VCC 50V
Collector Current
0.05 Ampere

SOT-523



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-523	R1	0.0025	3000	15000	150000	7"

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Supply Voltage	V _{CC}	V	50
Input Voltage	V _{IN}	V	-10~+40
Output Current	I _O	mA	50
Peak Collector Current	I _{CM}	mA	100
Power Dissipation	P _D	mW	150
Storage temperature	T _{stg}	°C	-55 ~+150
Junction temperature	T _j	°C	-55 ~+150

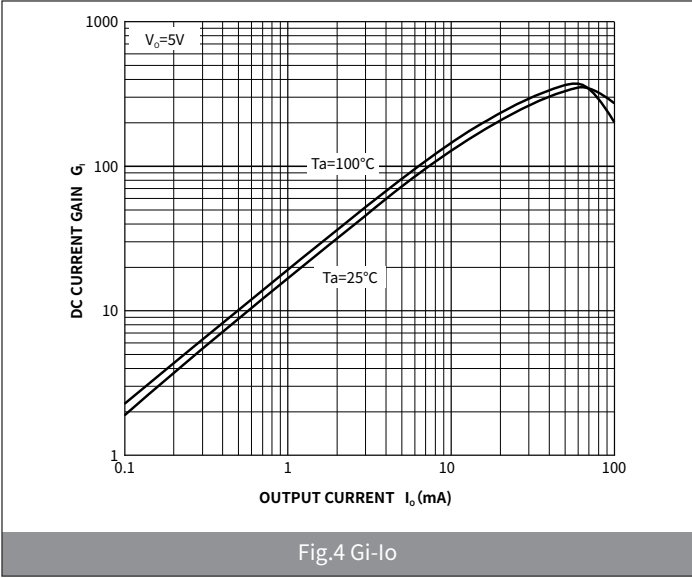
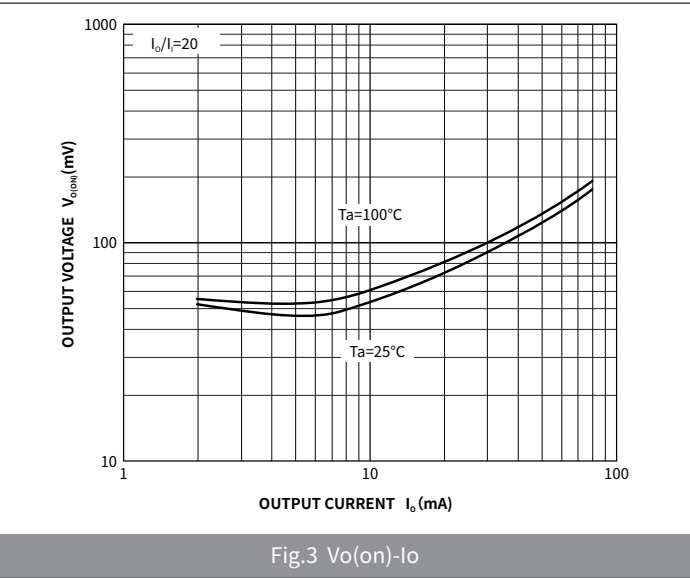
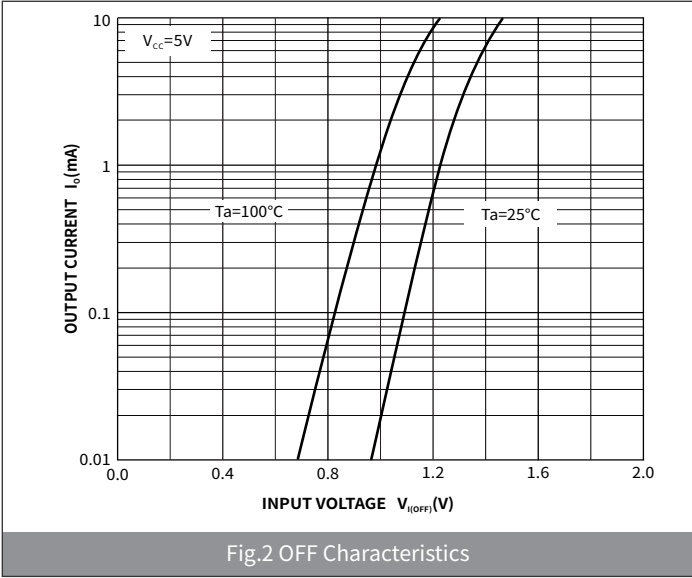
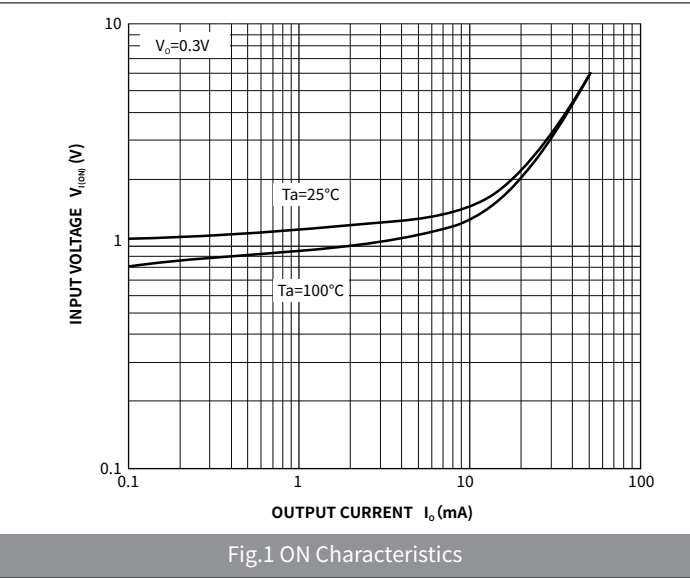
Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Typ	Max
Transition frequency	f _T	I _O = 5mA, V _O = 10V	MHz	-	250	-

Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Input voltage	$V_{I(off)}$	V	$I_o=100\mu A, V_{cc}=5V$	0.5	-	-
	$V_{I(on)}$		$I_o=10mA, V_o=0.3V$	-	-	3
Output voltage	$V_{O(on)}$		$I_o/I_i=10mA/0.5mA$	-	-	0.3
Input current	I_i	mA	$V_i=5V$	-		0.88
Output current	$I_{O(off)}$	μA	$V_{cc}=50V, V_i=0V$	-	-	0.5
DC Current Gain	h_{FE}	-	$V_o=5V, I_o=5mA$	30	-	-
Input resistance	R_i	k Ω	-	7	10	13
Resistance ratio	R_2/R_1	-	-	0.8	1	1.2

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Package Outline Dimensions (SOT-523)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.65	0.85	0.026	0.033
A1	0.40	0.60	0.016	0.024
B	0.25	0.35	0.010	0.014
b	0.15	0.25	0.006	0.010
C	0.05	0.15	0.002	0.006
D	0.70	0.90	0.028	0.035
D1	1.50	1.70	0.059	0.067
E	1.5	1.7	0.059	0.067
e	0.95	1.05	0.037	0.041
H	-	0.10	-	0.004
L	0.17	-	0.007	-

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.70	0.020	0.028
B	0.60	0.80	0.024	0.031
C	0.90	1.10	0.035	0.043
D	1.20	1.40	0.047	0.055