SOT-323 Plastic-Encapsulate Transistors

Features

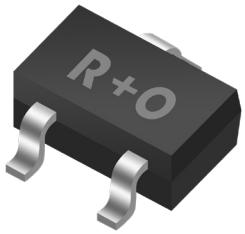
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

Supply Voltage
VCC 50V
Collector Current
0.1 Ampere

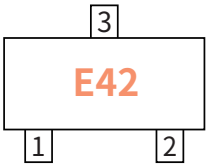
Mechanical Data

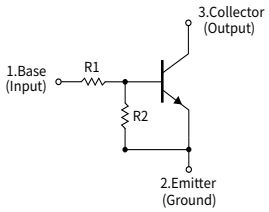
- Case: SOT-323
  Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

SOT-323



Function Diagram





Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.006	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	-5~+12
Output Current	I_O	mA	100
Power Dissipation	P_D	mW	200
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=100μA, V_{CC}=5V	0.5	-	-
	$V_{I(on)}$		I_O=5mA, V_O=0.3V	-	-	1.1
Output voltage	$V_{O(on)}$		I_O /I_I=5mA/0.25mA	-	-	0.3
Input current	I_I	mA	V_I=5V	-		3.6
Output current	$I_{O(off)}$	μA	V_{CC}=50V,V_I=0V	-	-	0.5
DC Current Gain	G_I	-	V_O=5V, I_O=10mA	80	-	-
Input resistance	R_1	kΩ	-	1.54	2.2	2.86
Resistance ratio	R_2 /R_1	-	-	17	21	26

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

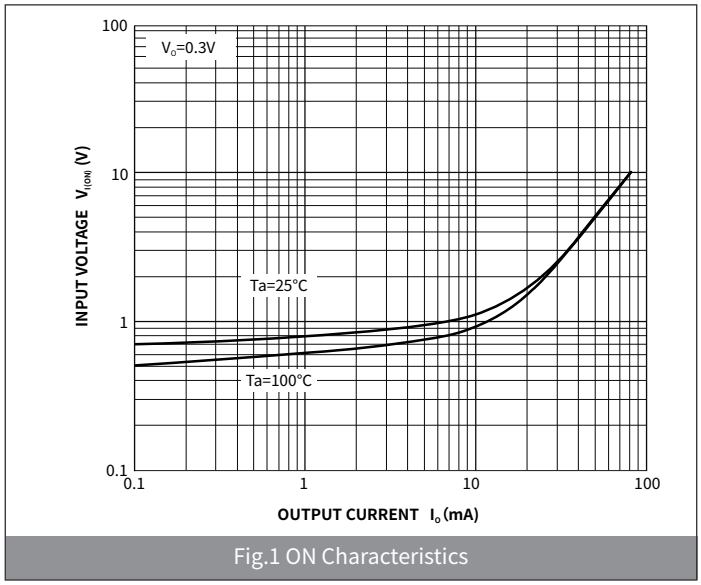


Fig.1 ON Characteristics

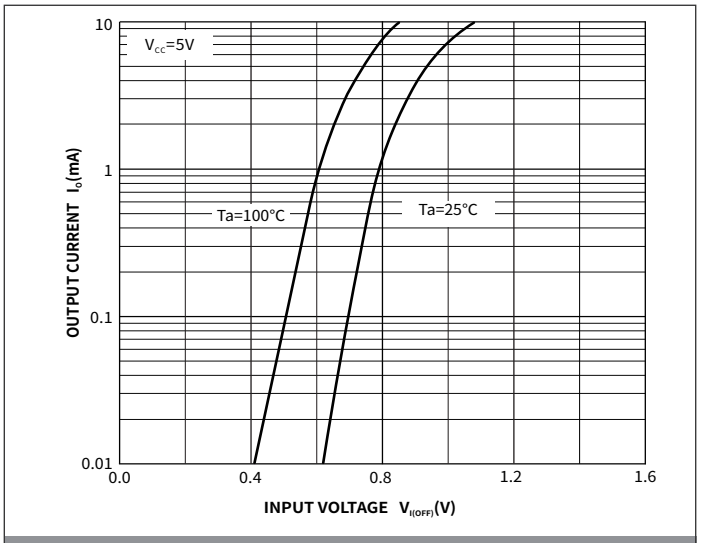


Fig.2 OFF Characteristics

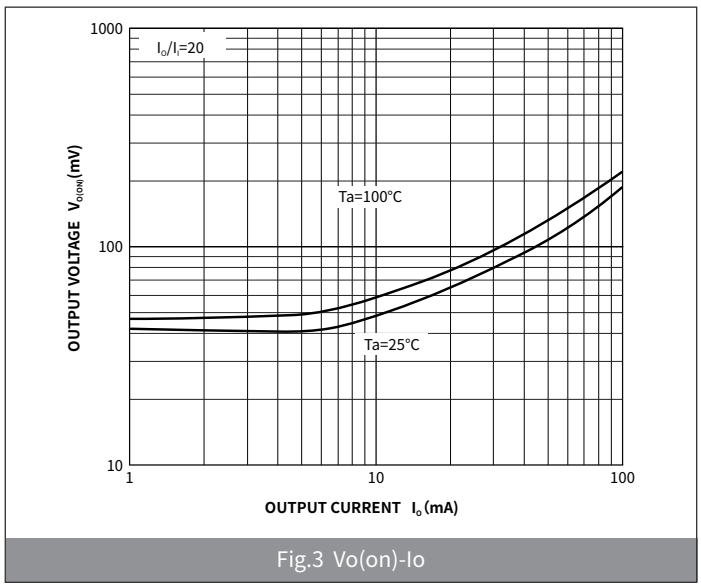


Fig.3 Vo(on)-Io

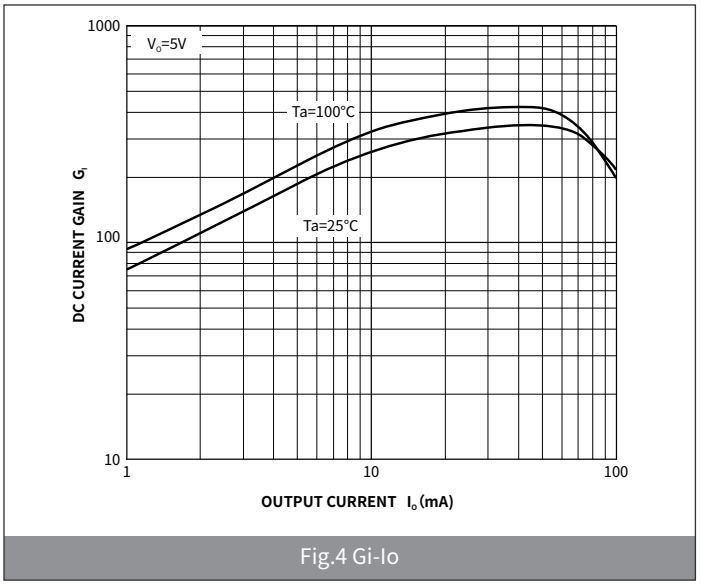
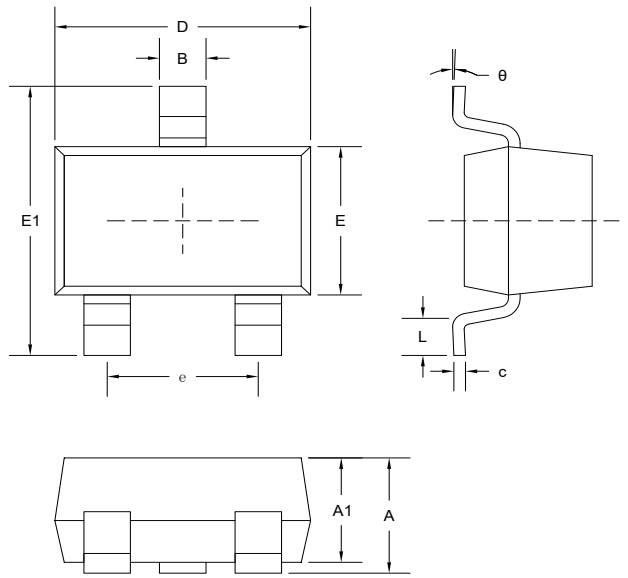


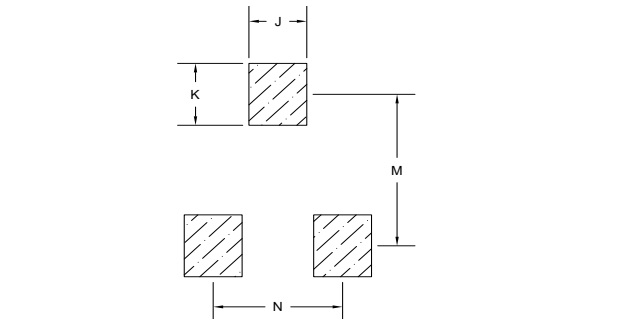
Fig.4 Gi-Io

Package Outline Dimensions (SOT-323)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	0.90	1.00	0.035	0.039
B	0.15	0.40	0.006	0.016
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.45	0.085	0.096
e	1.20	1.40	0.047	0.055
L	0.525REF		0.021 REF	
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.65	0.75	0.026	0.030
K	0.85	0.95	0.033	0.037
M	1.85	1.95	0.073	0.077
N	1.25	1.35	0.049	0.053