

Bias Resistor Transistor

PNP Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

●Applications

Inverter, Interface, Driver

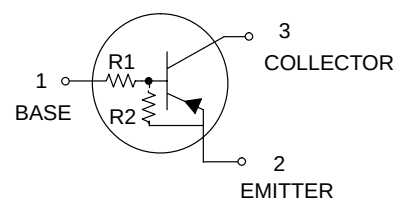
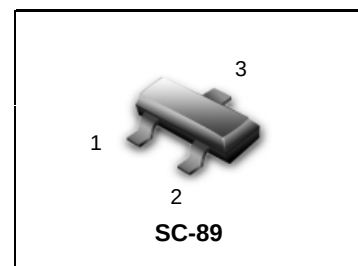
●Features

- 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 the device design easy.
- 4) Higher mounting densities can be achieved.

- We declare that the material of product compliance with RoHS requirements.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	-50	V
Input voltage	V_I	-30 to +10	V
Output current	I_O	-100	mA
	$I_{C(Max.)}$	-100	
Power dissipation	P_D	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C



●External characteristics (Unit: mm)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	-	-	-0.8	V	$V_{CC} = -5V, I_O = -100\mu A$
	$V_{I(on)}$	-3	-	-		$V_O = -0.3V, I_O = -2mA$
Output voltage	$V_{O(on)}$	-	-0.1	-0.3	V	$I_O = -10mA, I_I = -0.5mA$
Input current	I_I	-	-	-0.88	mA	$V_I = -5V$
Output current	$I_{O(off)}$	-	-	-0.5	μA	$V_{CC} = -50V, V_I = 0V$
DC current gain	G_I	24	-	-	-	$I_O = -10mA, V_O = -5V$
Input resistance	R_I	7	10	13	k Ω	-
Resistance ratio	R_2/R_1	0.37	0.47	0.57	-	-
Transition frequency	f_T *	-	250	-	MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$

* Characteristics of built-in transistor

●Electrical characteristics curves

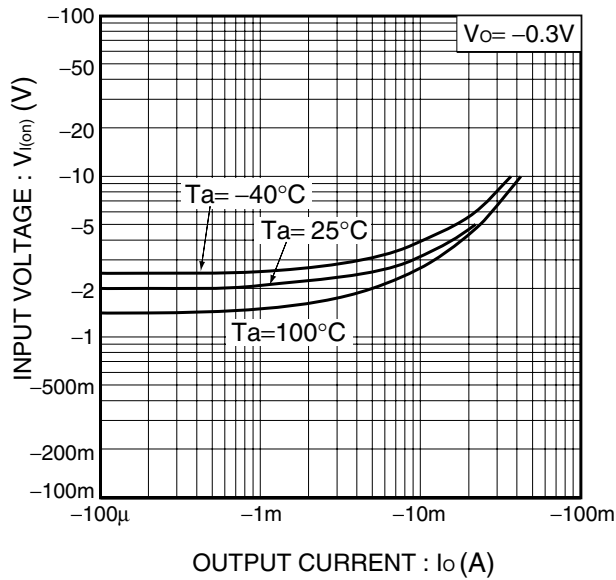


Fig.1 Input voltage vs. Output current (ON characteristics)

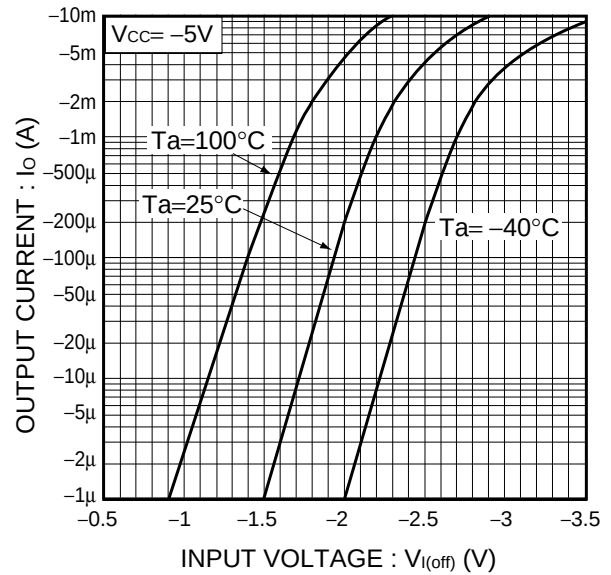


Fig.2 Output current vs. Input voltage (OFF characteristics)

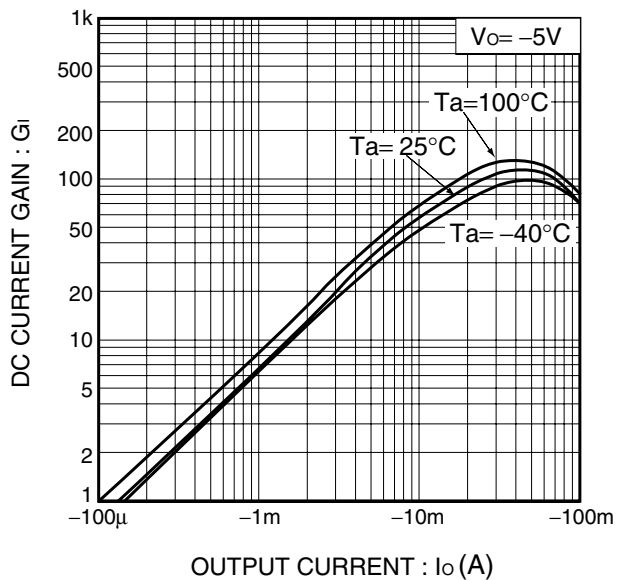


Fig.3 DC current gain vs. Output current

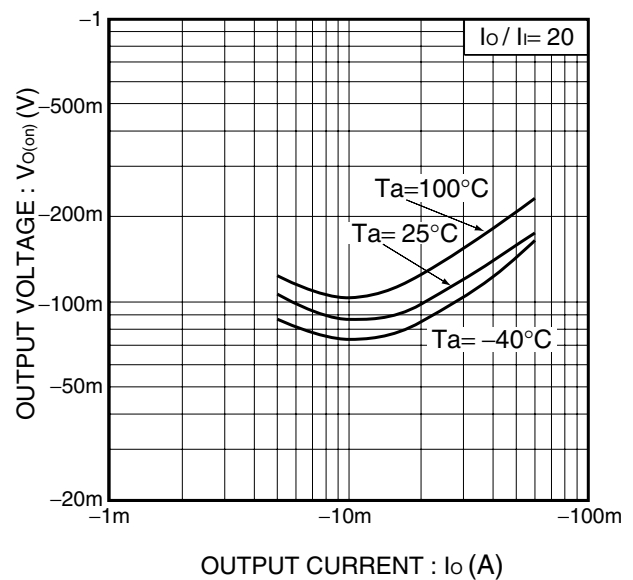
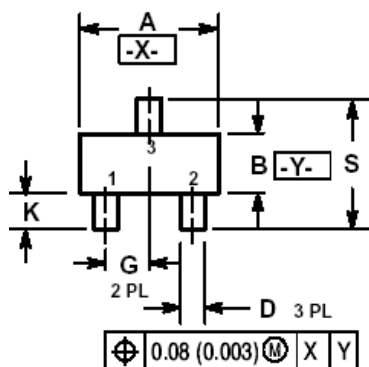


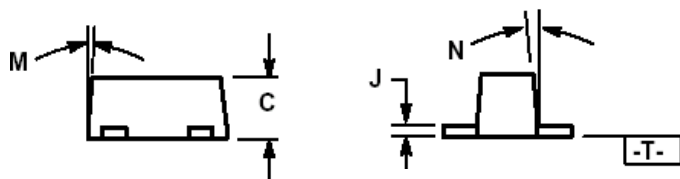
Fig.4 Output voltage vs. Output current

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NOTES:

- 1.DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2.CONTROLLING DIMENSION: MILLIMETERS
- 3.MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
- 4.463C-01 OBSOLETE, NEW STANDARD 463C-02.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.60	1.70	0.059	0.063	0.067
B	0.75	0.85	0.95	0.030	0.034	0.040
C	0.60	0.70	0.80	0.024	0.028	0.031
D	0.23	0.28	0.33	0.009	0.011	0.013
G	0.50 BSC			0.020 BSC		
H	0.53 REF			0.021 REF		
J	0.10	0.15	0.20	0.004	0.006	0.008
K	0.30	0.40	0.50	0.012	0.016	0.020
L	1.10 REF			0.043 REF		
M	----	----	10 °	----	----	10 °
N	----	----	10 °	----	----	10 °
S	1.50	1.60	1.70	0.059	0.063	0.067

