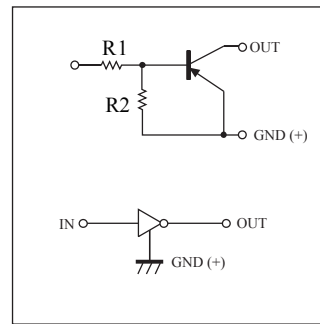
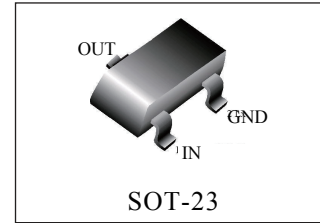


Digital transistors (built-in resistors)

• **Features**

- 1) The built-in bias resistor allows the configuration of an inverter circuit without connecting any external in-put resistors (see Equivalent cir-cuit).
- 2) Each bias resistor is a thin-film re-sistor. Since they are completely in-sulated, the input can be positively biased. The insulation also elimi-nates most of the parastic effects.
- 3) Circuit design is simplified since only the OFF and the ON conditions have to be set.



• **Device Marking and Ordering Information**

Device	Marking	Shipping
DTA216LT1G	BA	3000/Tape&Reel
DTA216LT1G	BA	10000/Tape&Reel

• **Absolute maximum ratings** ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	-50	V
Input voltage	V_{IN}	-5~+10	V
Output current	I_O	-100	mA
	$I_{C(Max)}$	-100	
Power dissipation	P_d	225	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55~+150	$^\circ\text{C}$

• **Electrical characteristics** ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	-	-	-0.3	V	$V_{CC} = -5V, I_O = -100\mu A$
	$V_{I(on)}$	-3	-	-		$V_O = -0.3V, I_O = -20mA$
Output voltage	$V_{O(on)}$	-	-	-0.3	V	$I_O/I_I = -10mA/-0.5mA$
Input current	I_I	-	-	-7.2	mA	$V_I = -5V$
Output current	$I_{O(off)}$	-	-	-0.5	μA	$V_{CC} = -50V, V_I = 0V$
DC current gain	G_I	33	-	-	-	$V_O = 5V, I_O = 5mA$
Input resistance	R_1	0.7	1	1.3	k Ω	-
Resistance ratio	R_2/R_1	8	10	12	-	-
Transition frequency	f_T	-	250	-	MHz	$V_{CE} = -10V, I_E = -5mA, f = 100MHz$ *

* Transition frequency of the device

• Electrical characteristic curves

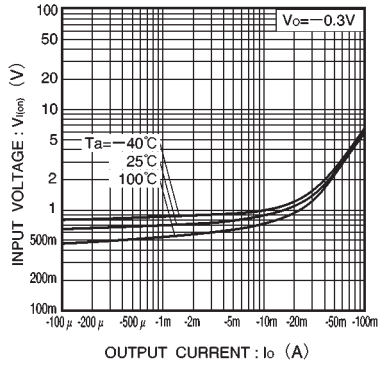


Fig.1 Input voltage vs. output current (ON characteristics)

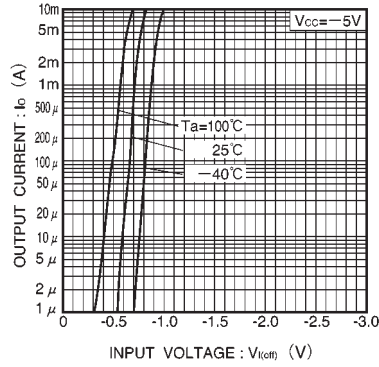


Fig.2 Output current vs. input voltage (OFF characteristics)

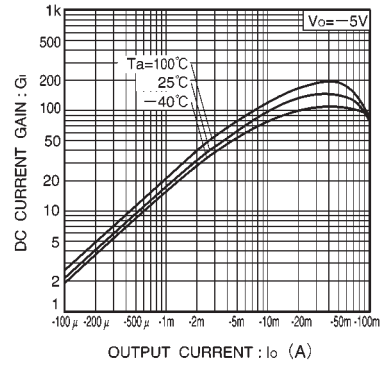


Fig.3 DC current gain vs. output current

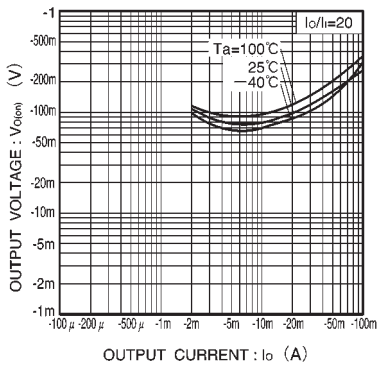
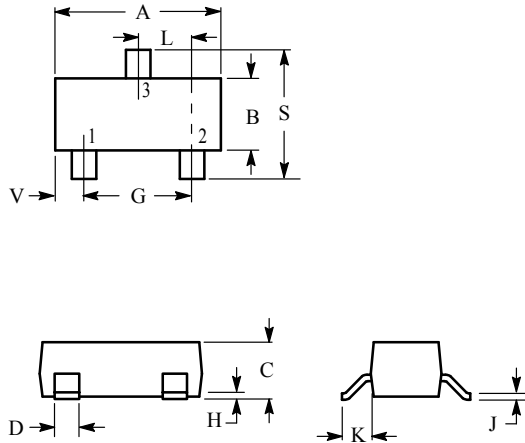


Fig.4 Output voltage vs. output current

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NOTES:

- 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982
- 2 CONTROLLING DIMENSION: INCH

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1 BASE
 2 EMITTER
 3 COLLECTOR

