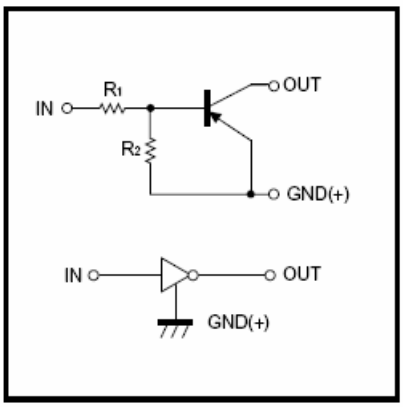
# TRANSISTOR(PNP)

**Features**

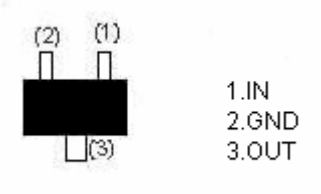
1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit).
2) The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely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

●Equivalent circuit



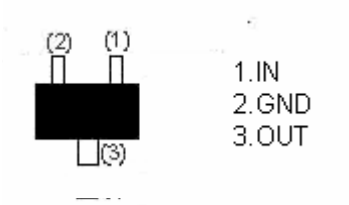

**PIN CONNENCTIONS AND MARKING**

DTA123JE



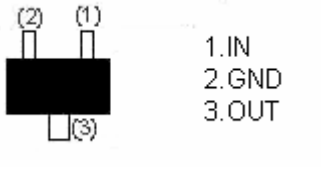

SOT-523 Addreviated symbol: E32

DTA123JUA




SOT-323 Addreviated symbol: 132

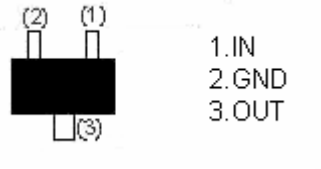
DTA123JKA




SOT-23-3L

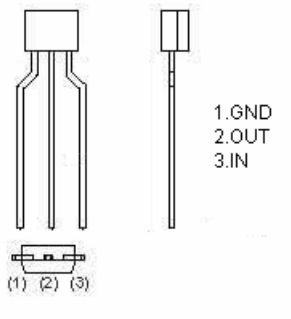
Addreviated symbol: E32

DTA123JCA




SOT-23 Addreviated symbol: E32

DTA123JSA




TO-92S

## Absolute maximum ratings(Ta=25℃)

| Parameter | Symbol | Limits (DTA123J□ ) | | | | | Unit |
|---|---|---|---|---|---|---|---|
| | | E | UA | KA | CA | SA | |
| Supply voltage | $V_{CC}$ | -50 | | | | | V |
| Input voltage | $V_{IN}$ | -12~+5 | | | | | V |
| Output current | $I_O$ | -100 | | | | | mA |
| | $I_{C(MAX)}$ | -100 | | | | | |
| Power dissipation | Pd | 150 | 200 | | | 300 | mW |
| Junction temperature | Tj | 150 | | | | | ℃ |
| Storage temperature | Tstg | -55~150 | | | | | ℃ |

## Electrical characteristics (Ta=25℃)

| Parameter | Symbol | Min. | Typ | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Input voltage | $V_{I(off)}$ | | | -0.5 | V | $V_{CC}$=-5V, $I_O$=-100μA |
| | $V_{I(on)}$ | -1.1 | | | | $V_O$=-0.3V, $I_O$=-5mA |
| Output voltage | $V_{O(on)}$ | | -0.1 | -0.3 | V | $I_O/I_I$=-5mA/-0.25mA |
| Input current | $I_I$ | | | -3.6 | mA | $V_I$=-5V |
| Output current | $I_{O(off)}$ | | | -0.5 | μA | $V_{CC}$=-50V, $V_I$=0 |
| DC current gain | $G_I$ | 80 | | | | $V_O$=-5V, $I_O$=-10mA |
| Input resistance | $R_1$ | 1.54 | 2.2 | 2.86 | KΩ | - |
| Resistance ratio | $R_2/R_1$ | 17 | 21 | 26 | | - |
| Transition frequency | $f_T$ | | 250 | | MHz | $V_O$=-10V, $I_O$=-5mA, f=100MHz |

# Typical Characteristics

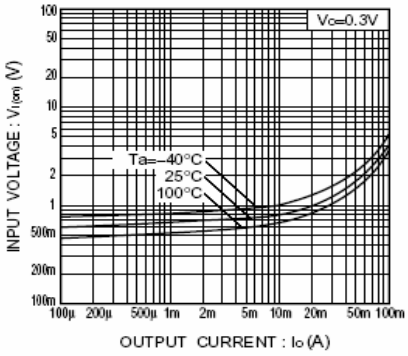



Fig.1 Input voltage vs. output current (ON characteristics)

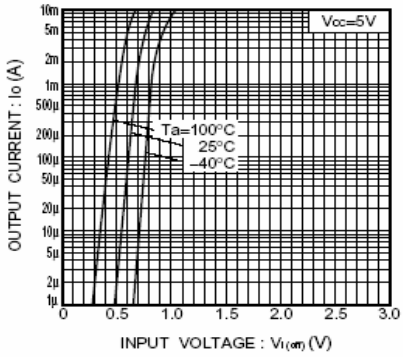



Fig.2 Output current vs. input voltage (OFF characteristics)

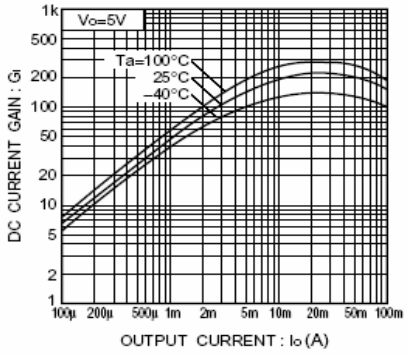



Fig.3 DC current gain vs. output current

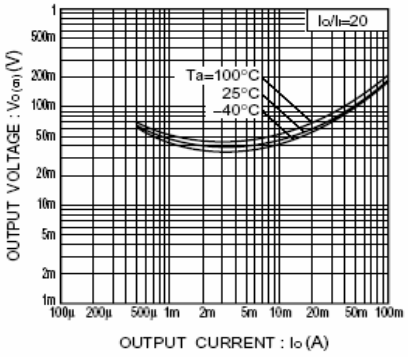



Fig.4 Output voltage vs. output current