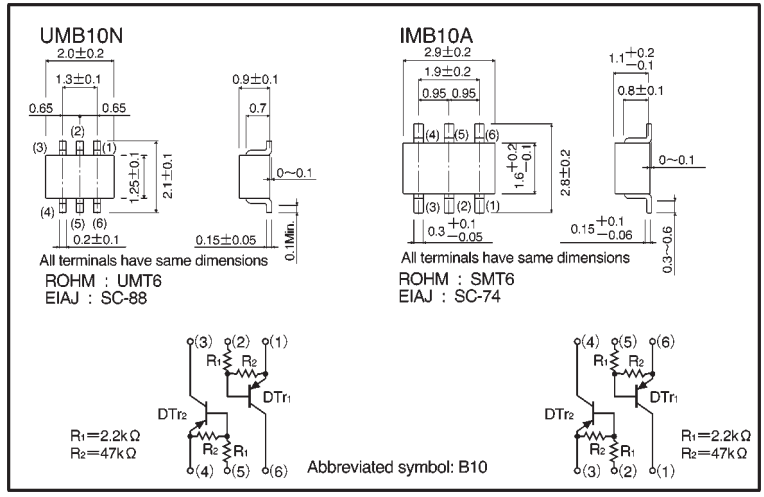
# General purpose (dual digital transistors)

## UMB10N / IMB10A

●Features

1) Two DTA123J chips in a UMT or SMT package.
2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

●External dimensions (Units: mm)




●Structure

Epitaxial planar type
PNP silicon transistor
(Built-in resistor type)

The following characteristics apply to both $DTr_1$ and $DTr_2$.

●Absolute maximum ratings (Ta = 25°C)

| Parameter | | Symbol | Limits | Unit |
|---|---|---|---|---|
| Supply voltage | | $V_{CC}$ | −50 | V |
| Input voltage | | $V_{IN}$ | −12 | V |
| | | | 5 | |
| Output current | | $I_O$ | −100 | mA |
| | | $I_{C(Max.)}$ | −100 | |
| Power dissipation | UMB10N | Pd | 150(TOTAL) | mW *1 |
| | IMB10A | | 300(TOTAL) | mW *2 |
| Junction temperature | | Tj | 150 | ℃ |
| Storage temperature | | Tstg | −55～+150 | ℃ |

*1 120mW per element must not be exceeded.
*2 200mW per element must not be exceeded.

(96-262-A123J)

●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Input voltage | $V_{I(off)}$ | — | — | −0.3 | V | $V_{CC}$=−5V, $I_O$=−100 μA |
| | $V_{I(on)}$ | −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, $V_I$=0V |
| DC current gain | $G_I$ | 80 | — | — | — | $V_O$=−5V, $I_O$=−10mA |
| Transition frequency | $f_T$ | — | 250 | — | MHz | $V_{CE}$=−10mA, $I_E$=5mA, f=100MHz ✻ |
| Input resistance | $R_1$ | 1.54 | 2.2 | 2.86 | kΩ | — |
| Resistance ratio | $R_2/R_1$ | 17 | 21 | 26 | — | — |

✻ Transition frequency of the device

●Packaging specifications

| | Packaging type | Taping | |
|---|---|---|---|
| | Code | TN | T110 |
| Part No. | Basic ordering unit (pieces) | 3000 | 3000 |
| UMB10N | | ○ | — |
| IMB10A | | — | ○ |

●Electrical characteristic curves

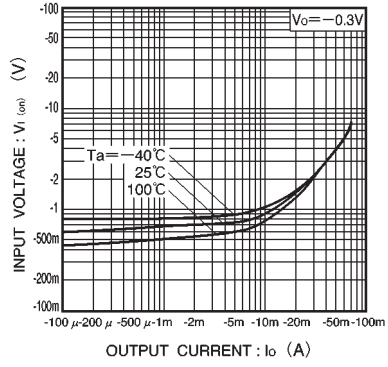



Fig.1 Input voltage vs. output current (ON characteristics)

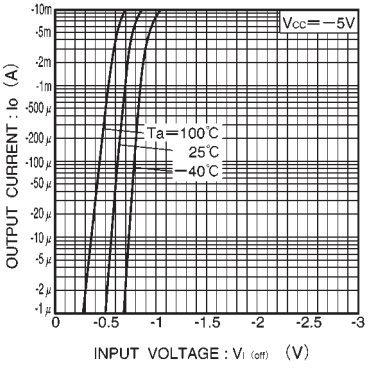



Fig.2 Output current vs. input voltage (OFF characteristics)

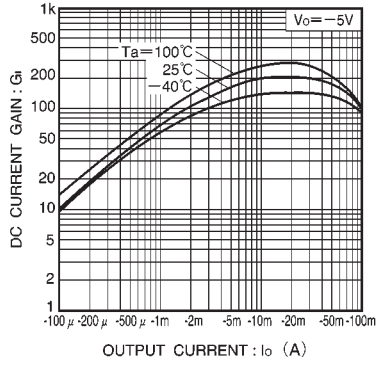



Fig.3 DC current gain vs. output current

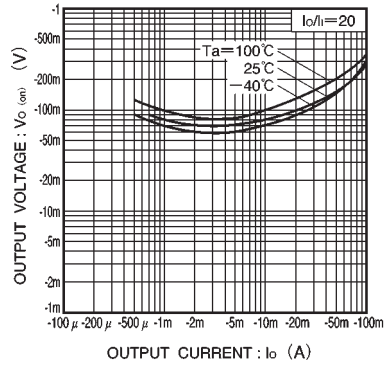



Fig.4 Output voltage vs. output current