# General purpose (dual digital transistors)

## EMB11 / UMB11N / IMB11A

### ●Features

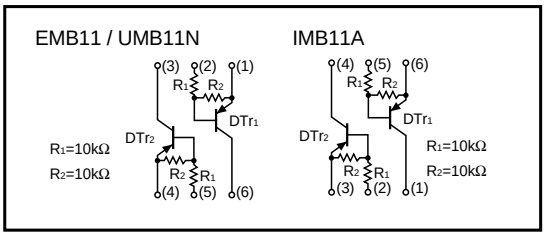
1) Two DTA114E chips in a EMT or UMT or SMT package.
2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

### ●Structure

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

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

### ●Equivalent circuit



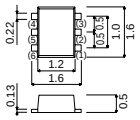

### ●Absolute maximum ratings (Ta = 25°C)

| Parameter | | Symbol | Limits | Unit |
|---|---|---|---|---|
| Supply voltage | | $V_{CC}$ | −50 | V |
| Input voltage | | $V_{IN}$ | −40 | V |
| | | | 10 | |
| Output current | | $I_O$ | −50 | mA |
| | | $I_{C\ (Max.)}$ | −100 | |
| Power dissipation | EMB11, UMB11N | Pd | 150 (TOTAL) | mW ※1 |
| | IMB11A | | 300 (TOTAL) | ※2 |
| Junction temperature | | Tj | 150 | ˚C |
| Storage temperature | | Tstg | −55 to +150 | ˚C |

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

### ●External dimensions (Unit : mm)

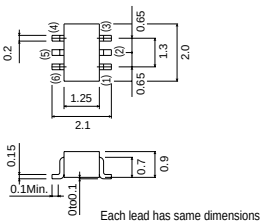
EMB11




ROHM : EMT6

Abbreviated symbol : B11

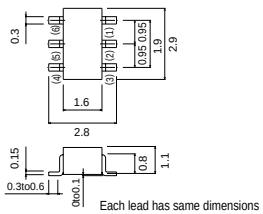
UMB11N




ROHM : UMT6
EIAJ : SC-88

Abbreviated symbol : B11

IMB11A




ROHM : SMT6
EIAJ : SC-74

Abbreviated symbol : B11

## ●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Input voltage | $V_{I\,(off)}$ | – | – | –0.5 | V | $V_{CC}$= –5V, $I_O$= –100μA |
| | $V_{I\,(on)}$ | –3.0 | – | – | | $V_O$= –0.3V, $I_O$= –10mA |
| Output voltage | $V_{O\,(on)}$ | – | –0.1 | –0.3 | V | $I_O/I_I$= –10mA/ –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 | $G_I$ | 30 | – | – | – | $V_O$= –5V, $I_O$= –5mA |
| Transition frequency | $f_T$ | – | 250 | – | MHz | $V_{CE}$= –10V, $I_E$=5mA, f=100MHz ✻ |
| Input resistance | $R_1$ | 7 | 10 | 13 | kΩ | – |
| Resistance ratio | $R_2$ / $R_1$ | 0.8 | 1 | 1.2 | – | – |

✻ Transition frequency of the device

## ●Packaging specifications

| Type | Package | Taping | | |
|---|---|---|---|---|
| | Code | T2R | TN | T110 |
| | Basic ordering unit (pieces) | 8000 | 3000 | 3000 |
| EMB11 | | ○ | — | — |
| UMB11N | | — | ○ | — |
| IMB11A | | — | — | ○ |

## ●Electrical characteristic curves

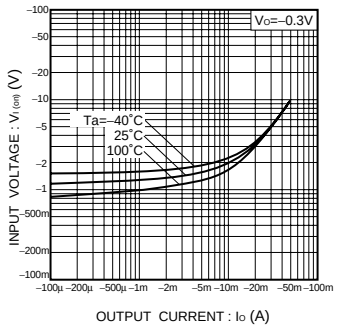



Fig.1 Input voltage vs. output current (ON characteristics)

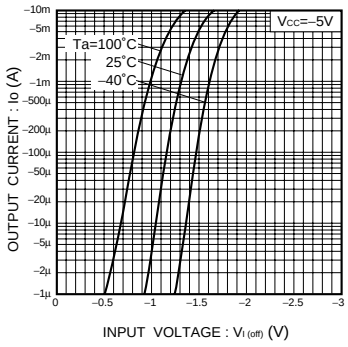



Fig.2 Output current vs. input voltage (OFF characteristics)

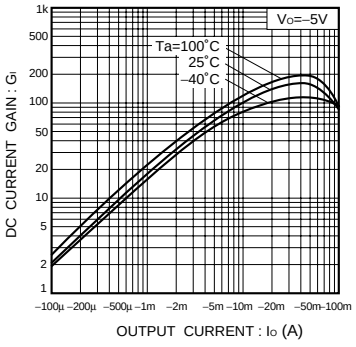



Fig.3 DC current gain vs. output current

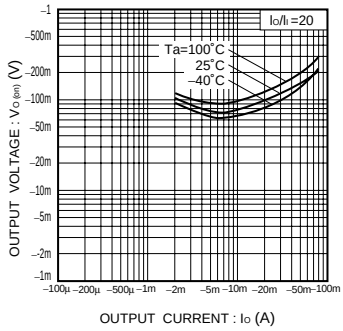



Fig.4 Output voltage vs. output current

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