# Emitter common (dual digital transistors)

## EMA11 / UMA11N / FMA11A

### ●Features

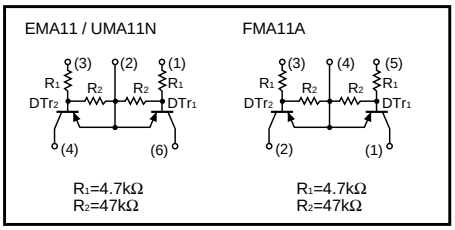
1) Two DTA143Z chips in a EMT or UMT or SMT package.
2) Mounting cost and area can be cut in half.

### ●Structure

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

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

### ●Equivalent circuit




### ●Packaging specifications

| | Package | Taping | | |
|---|---|---|---|---|
| | Code | T2R | TR | T148 |
| Type | Basic ordering unit (pieces) | 8000 | 3000 | 3000 |
| EMA11 | | ○ | – | – |
| UMA11N | | – | ○ | – |
| FMA11A | | – | – | ○ |

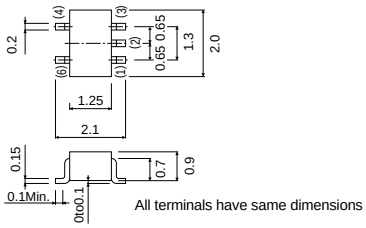
### ●Absolute maximum ratings (Ta = 25°C)

| Parameter | | Symbol | Limits | Unit |
|---|---|---|---|---|
| Supply voltage | | $V_{CC}$ | −50 | V |
| Input voltage | | $V_{IN}$ | −30 | V |
| | | | 5 | |
| Output current | | $I_O$ | −100 | mA |
| | | $I_{C\ (Max.)}$ | −100 | |
| Power dissipation | EMA11 / UMA11N | Pd | 150 (TOTAL) | mW ∗1 |
| | FMA11A | | 300 (TOTAL) | ∗2 |
| Junction temperature | | Tj | 150 | °C |
| Storage temperature | | Tstg | −55~+150 | °C |

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

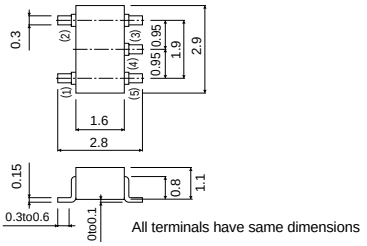
### ●External dimensions (Units : mm)

EMA11 / UMA11N




ROHM : UMT5
EIAJ : SC-88A
Abbreviated symbol: A11

FMA11A




ROHM : SMT5
EIAJ : SC-74A
Abbreviated symbol: A11

## ●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 |
| | $V_{I(on)}$ | –1.3 | – | – | | $V_O$=–0.3V, $I_O$=–5mA |
| Output voltage | $V_{O(on)}$ | – | –0.1 | –0.3 | V | $I_O/I_I$=–5mA/–0.25mA |
| Input current | $I_I$ | – | – | –1.8 | 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 | $R_1$ | 3.29 | 4.7 | 6.11 | kΩ | – |
| Resistance ratio | $R_2/R_1$ | 8 | 10 | 12 | – | – |

* Transition frequency of the device

## ●Electrical characteristic curves

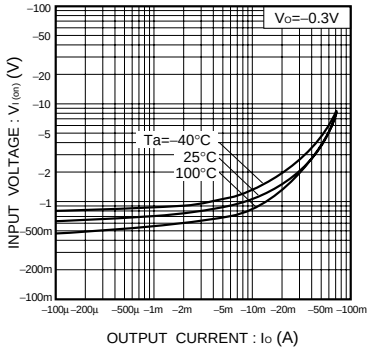



Fig.1 Input voltage vs. output current (ON characteristics)

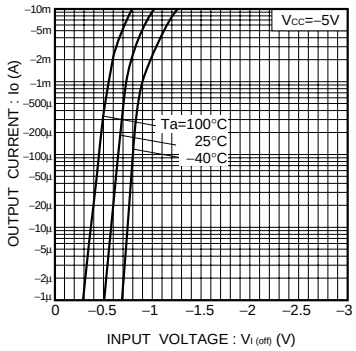



Fig.2 Output current vs. input voltage (OFF characteristics)

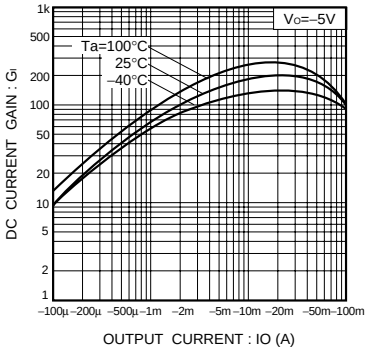



Fig.3 DC current gain vs. output current

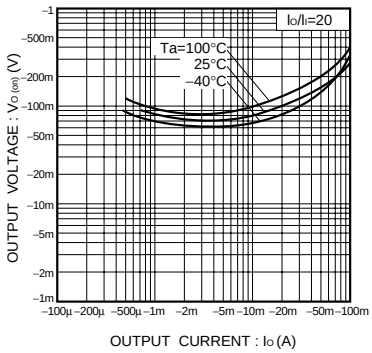



Fig.4 Output voltage vs. output current