

Emitter common (dual digital transistors)

UMA2N / FMA2A

●Features

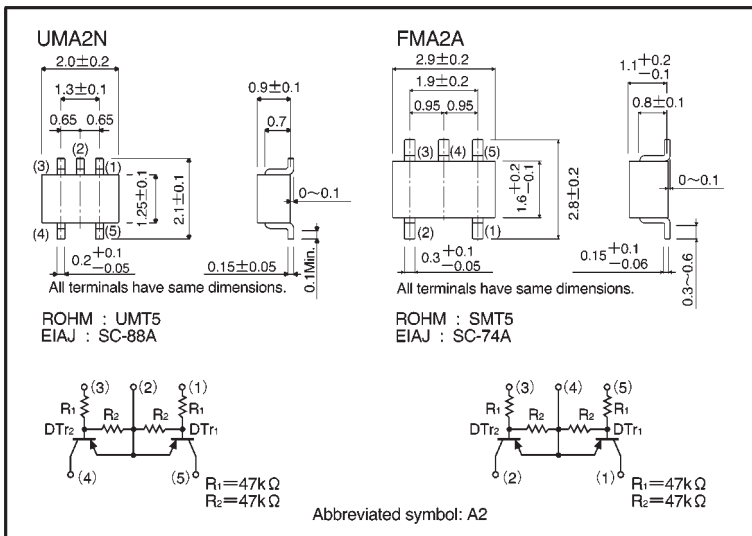
- 1) Two DTA144E transistors in a single UMT and a SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

Dual PNP digital transistor (each with two built in resistors)

The following characteristics apply to both DT_{R1} and DT_{R2}.

●External dimensions (Units:mm)



●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 | -30 | mA |
| | I _{C(Max.)} | -100 | |
| Power dissipation | UMA2N | 150 (TOTAL) | mW |
| | FMA2A | 300 (TOTAL) | |
| Junction temperature | T _j | 150 | °C |
| Storage temperature | T _{stg} | -55~+150 | °C |

*1 120mW per element must not be exceeded.

*2 200mW per element must not be exceeded.

●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|--------------|------|------|-------|------------|---|
| Input voltage | $V_{I(off)}$ | — | — | -0.5 | V | $V_{CC} = -5V, I_o = -100 \mu A$ |
| | $V_{I(on)}$ | -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 | — | — | -0.18 | mA | $V_i = -5V$ |
| Output current | $I_{O(off)}$ | — | — | -0.5 | μA | $V_{CC} = -50V, V_i = 0V$ |
| DC current gain | G_i | 68 | — | — | — | $V_o = -5V, I_o = -10mA$ |
| Transition frequency | f_T | — | 250 | — | MHz | $V_{CE} = 10mA, I_E = -5mA, f = 100MHz^*$ |
| Input resistance | R_1 | 32.9 | 47 | 61.1 | k Ω | — |
| Resistance ratio | R_2/R_1 | 0.8 | 1 | 1.2 | — | — |

* Transition frequency of the device

●Packaging specifications

| Part No. | Packaging type | Taping | |
|----------|------------------------------|--------|------|
| | Code | TR | T148 |
| | Basic ordering unit (pieces) | 3000 | 3000 |
| UMA2N | ○ | — | — |
| FMA2A | — | ○ | — |

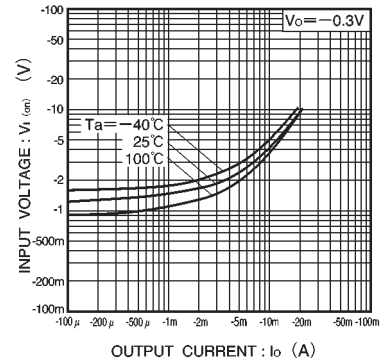


Fig.1 Input voltage vs. output current (ON characteristics)

●Electrical characteristic curves

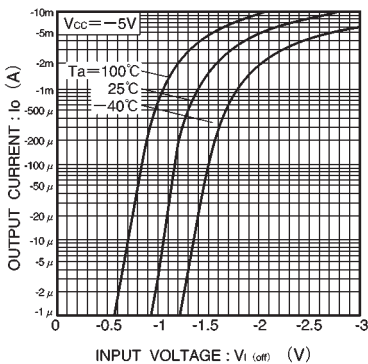


Fig.2 Output current vs. input voltage (OFF characteristics)

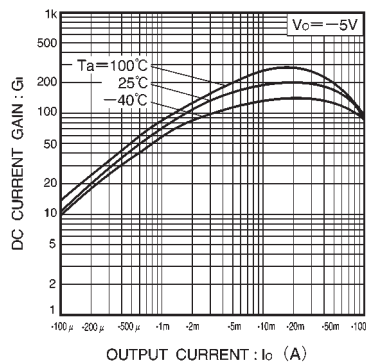


Fig.3 DC current gain vs. output current

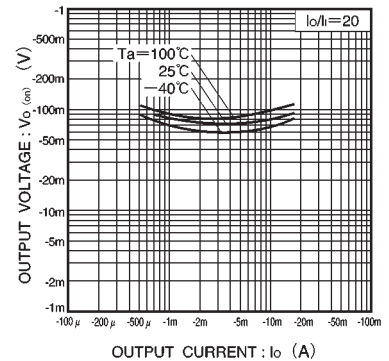


Fig.4 Output voltage vs. output current