

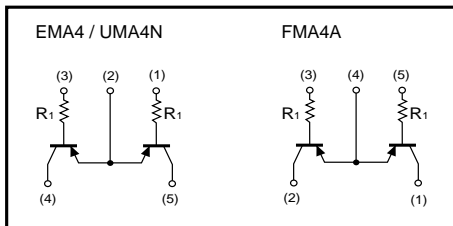
# General purpose (dual digital transistors)

## EMA4 / UMA4N / FMA4A

●Feature

- 1) Two DTA114T chips in a EMT or UMT or SMT package.

●Equivalent circuits



●Package, marking, and packaging specifications

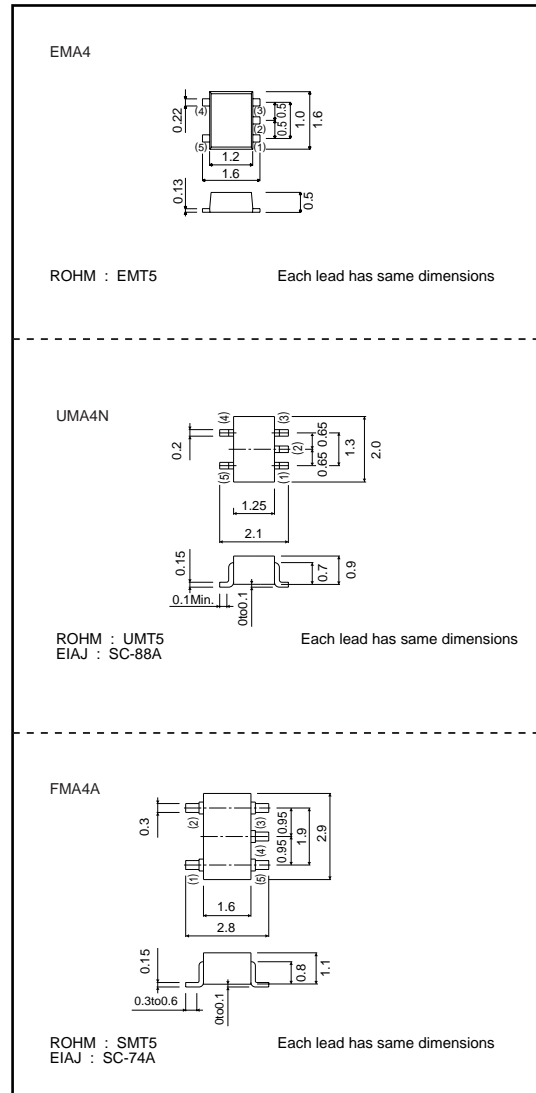
| Type                         | EMA4 | UMA4N | FMA4A |
|------------------------------|------|-------|-------|
| Package                      | EMT5 | UMT5  | SMT5  |
| Marking                      | A4   | A4    | A4    |
| Code                         | T2R  | TR    | T148  |
| Basic ordering unit (pieces) | 8000 | 3000  | 3000  |

●Absolute maximum ratings (Ta=25°C)

| Parameter                 | Symbol           | Limits                   | Unit        |
|---------------------------|------------------|--------------------------|-------------|
| Collector-base voltage    | V <sub>CB0</sub> | -50                      | V           |
| Collector-emitter voltage | V <sub>CE0</sub> | -50                      | V           |
| Emitter-base voltage      | V <sub>EB0</sub> | -5                       | V           |
| Collector current         | I <sub>c</sub>   | -100                     | mA          |
| Power dissipation         | EMA4 / UMA4N     | 150(TOTAL)<br>300(TOTAL) | mW *1<br>*2 |
|                           | FMA4A            |                          |             |
| Junction temperature      | T <sub>j</sub>   | 150                      | °C          |
| Storage temperature       | T <sub>stg</sub> | -55 to +150              | °C          |

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

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol               | Min. | Typ. | Max. | Unit | Conditions   |
|--------------------------------------|----------------------|------|------|------|------|--|
| Collector-base breakdown voltage     | BV <sub>CB0</sub>    | -50  | -    | -    | V    | I <sub>C</sub> =-50μA                                  |
| Collector-emitter breakdown voltage  | BV <sub>CEO</sub>    | -50  | -    | -    | V    | I <sub>C</sub> =-1mA                                   |
| Emitter-base breakdown voltage       | BV <sub>EB0</sub>    | -5   | -    | -    | V    | I <sub>E</sub> =-50μA                                  |
| Collector cutoff current             | I <sub>CBO</sub>     | -    | -    | -0.5 | μA   | V <sub>CB</sub> =-50V                                  |
| Emitter cutoff current               | I <sub>EB0</sub>     | -    | -    | -0.5 | μA   | V <sub>EB</sub> =-4V                                   |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | -    | -    | -0.3 | V    | I <sub>C</sub> /I <sub>B</sub> =-10mA/-1mA             |
| DC current transfer ratio            | h <sub>FE</sub>      | 100  | 250  | 600  | -    | V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA             |
| Transition frequency                 | f <sub>T</sub>       | -    | 250  | -    | MHz  | V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz * |
| Input resistance                     | R <sub>1</sub>       | 7    | 10   | 13   | kΩ   | -  |

\*Transition frequency of the device.

●Electrical characteristics curves

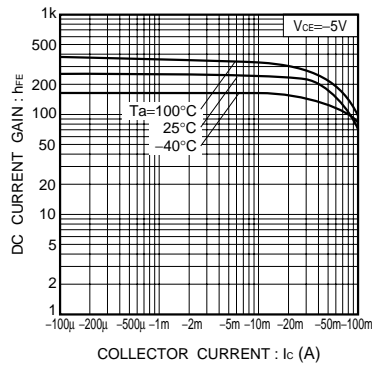


Fig.1 DC current gain vs. collector current

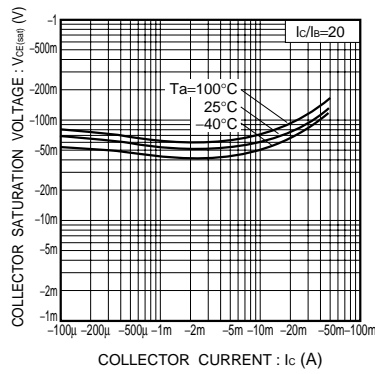


Fig.2 Collector-emitter saturation voltage vs. collector current

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