

# UMC3N / FMC3A

- 1) Both the DTA114E chip and DTC114E chip in a UMT or SMT package.
- 2) Ideal for power switch circuits.
- 3) Mounting cost and area can be cut in half.

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

**UMC3N**

2.0±0.2  
1.3±0.1  
0.65 0.65  
(2)  
(3) (1)  
(4) (5)  
1.25±0.1  
2.1±0.1  
0.2+0.1/-0.05  
0.15±0.05  
0.1Min.

All terminals have same dimensions

**FMC3A**

2.9±0.2  
1.9±0.2  
0.95 0.95  
(3) (4) (5)  
(2) (1)  
1.6+0.2/-0.1  
2.8±0.2  
0.3+0.1/-0.05  
0.15+0.1/-0.06  
0.3~0.6

All terminals have same dimensions

ROHM : UMT5  
EIAJ : SC-88A

ROHM : SMT5  
EIAJ : SC-74A

Abbreviated symbol: C3

| Parameter            |       | Symbol                | Limits     | Unit |
|----------------------|-------|-----------------------|------------|------|
| Supply voltage       |       | V <sub>CC</sub>       | 50         | V    |
| Input voltage        |       | V <sub>IN</sub>       | 40         | V    |
|                      |       |                       | −10        |      |
| Output current       |       | I <sub>o</sub>        | 50         | mA   |
|                      |       | I <sub>C</sub> (Max.) | 100        |      |
| Power dissipation    | UMC3N | P <sub>d</sub>        | 150(TOTAL) | mW   |
|                      | FMC3A |                       | 300(TOTAL) |      |
| Junction temperature |       | T <sub>j</sub>        | 150        | °C   |
| Storage temperature  |       | T <sub>stg</sub>      | −55~+150   | °C   |

\*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    | —    | —    |            | $V_o=0.3V, I_o=10mA$               |
| Output voltage       | $V_{O(on)}$  | —    | 0.1  | 0.3  | V          | $I_o=10mA, I_i=0.5mA$              |
| Input current        | $I_i$        | —    | —    | 0.88 | mA         | $V_i=5V$                           |
| Output current       | $I_o(off)$   | —    | —    | 0.5  | $\mu A$    | $V_{CC}=50V, V_i=0V$               |
| DC current gain      | $G_i$        | 30   | —    | —    | —          | $V_o=5V, I_o=5mA$                  |
| Transition frequency | $f_T$        | —    | 250  | —    | MHz        | $V_{CE}=10mA, I_E=-5mA, f=100MHz*$ |
| Input resistance     | $R_i$        | 7    | 10   | 13   | k $\Omega$ | —                                  |
| 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 |
| UMC3N    |                              | ○      | —    |
| FMC3A    |                              | —      | ○    |

●Electrical characteristic curves

DT<sub>r1</sub> (NPN)

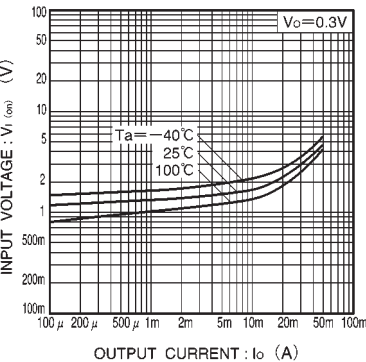


Fig.1 Input voltage vs. output current (ON characteristics)

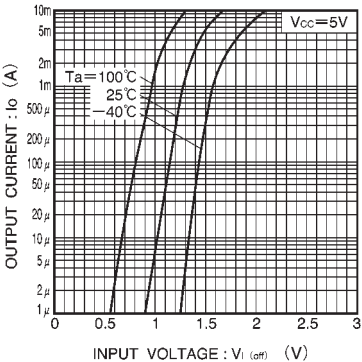


Fig.2 Output current vs. input voltage (OFF characteristics)

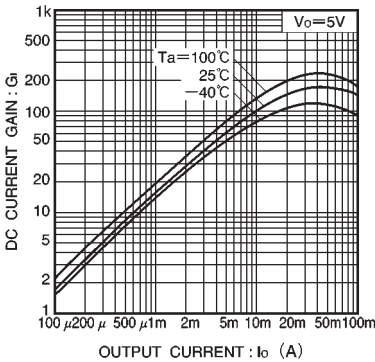


Fig.3 DC current gain vs. output current

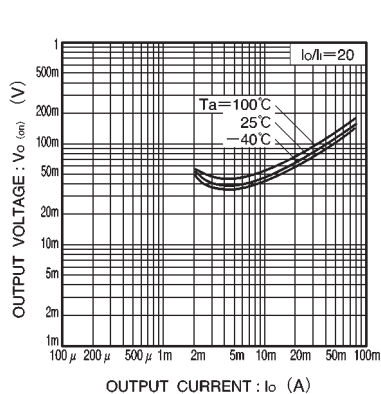


Fig.4 Output voltage vs. output current

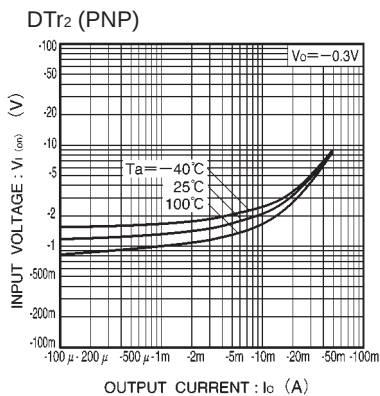


Fig.5 Input voltage vs. output current (ON characteristics)

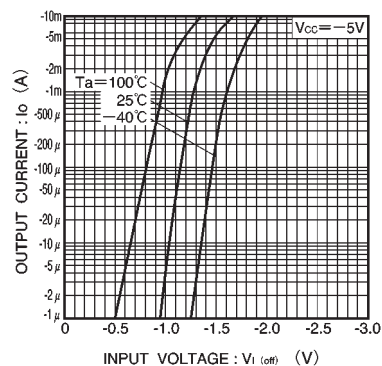


Fig.6 Output current vs. input voltage (OFF characteristics)

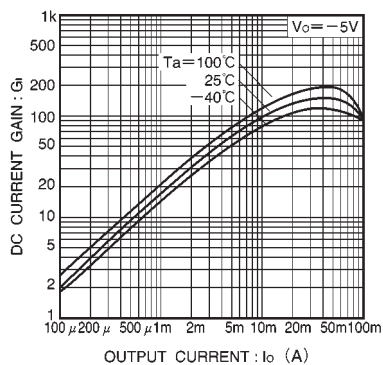


Fig.7 DC current gain vs. output current

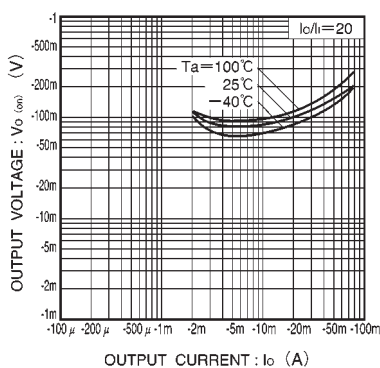


Fig.8 Output voltage vs. output current