

# UMC4N / FMC4A

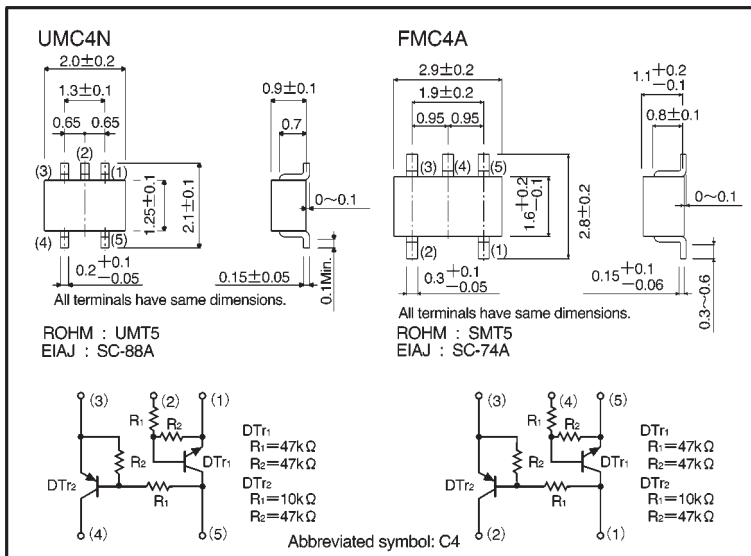
●Features

- 1) Both the DTA114Y chip and DTC144E chip in a UMT or SMT package.
- 2) Ideal for power switching circuits.
- 3) Mounting cost and area can be cut in half.

●Structure

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

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits		Unit
		DTTr1 (NPN)	DTTr2 (PNP)	
Supply voltage	V <sub>CC</sub>	50	-50	V
Input voltage	V <sub>IN</sub>	40	-40	V
		-10	6	
Output current	I <sub>o</sub>	30	-100	mA
	I <sub>C(Max.)</sub>	100	-100	
Power dissipation	UMC4N	150 (TOTAL)		mW
	FMC4A	300 (TOTAL)		
Junction temperature	T <sub>j</sub>	150		°C
Storage temperature	T <sub>stg</sub>	-55~+150		°C

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

# UMC4N / FMC4A

● Electrical characteristics, DT<sub>r1</sub> (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	—	—	0.5	V	V <sub>CC</sub> =5V, I <sub>o</sub> =100 μA
	V <sub>I(on)</sub>	3	—	—	V	V <sub>o</sub> =0.3V, I <sub>o</sub> =2mA
Output voltage	V <sub>O(on)</sub>	—	0.1	0.3	V	I <sub>o</sub> /I <sub>i</sub> =10mA/0.5mA
Input current	I <sub>i</sub>	—	—	0.18	mA	V <sub>i</sub> =5V
Output current	I <sub>o(off)</sub>	—	—	0.5	μA	V <sub>CC</sub> =50V, V <sub>i</sub> =0V
DC current gain	G <sub>i</sub>	68	—	—	—	V <sub>o</sub> =5V, I <sub>o</sub> =5mA
Transition frequency	f <sub>r</sub>	—	250	—	MHz	V <sub>CE</sub> =10mA, I <sub>E</sub> =-5mA, f=100MHz*
Input resistance	R <sub>i</sub>	32.9	47	61.1	kΩ	—
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	0.8	1	1.2	—	—

\* Transition frequency of the device

● Electrical characteristics, DT<sub>r2</sub> (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	—	—	-0.3	V	V <sub>CC</sub> =-5V, I <sub>o</sub> =-100 μA
	V <sub>I(on)</sub>	-1.4	—	—	V	V <sub>o</sub> =-0.3V, I <sub>o</sub> =-1mA
Output voltage	V <sub>O(on)</sub>	—	-0.1	-0.3	V	I <sub>o</sub> /I <sub>i</sub> =-5mA / -0.25mA
Input current	I <sub>i</sub>	—	—	-0.88	mA	V <sub>i</sub> =-5V
Output current	I <sub>o(off)</sub>	—	—	-0.5	μA	V <sub>CC</sub> =-50V, V <sub>i</sub> =0V
DC current gain	G <sub>i</sub>	68	—	—	—	V <sub>o</sub> =-5V, I <sub>o</sub> =-5mA
Transition frequency	f <sub>r</sub>	—	250	—	MHz	V <sub>CE</sub> =10mA, I <sub>E</sub> =-5mA, f=100MHz*
Input resistance	R <sub>i</sub>	7	10	13	kΩ	—
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	3.7	4.7	5.7	—	—

\* Transition frequency of the device

● Packaging specifications

Part No.	Packaging type	Taping	
	Code	TR	T148
	Basic ordering unit (pieces)	3000	3000
UMC4N		○	—
FMC4A		—	○