

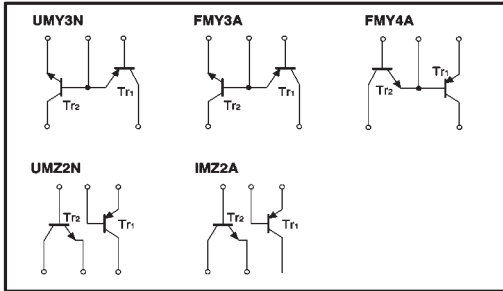
# Power management (dual transistors)

## UMY3N / UMZ2N / FMY3A / FMY4A / IMZ2A

### ●Features

- 1) Both a 2SA1037AK chip and 2SC1412K chip in a UMT or SMT package.

### ●Circuit diagrams



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

Parameter	Symbol	Limits		Unit
		Tr1	Tr2	
Collector-base voltage	V <sub>CB0</sub>	-60	60	V
Collector-emitter voltage	V <sub>CE0</sub>	-50	50	V
Emitter-base voltage	V <sub>EB0</sub>	-6	7	V
Collector current	I <sub>c</sub>	-150	150	mA
Collector power dissipation	UMY3N, UMZ2N	150 (TOTAL)		mW
	FMY3A, FMY4A, IMZ2A	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.

### ●Package, marking, and packaging specifications

Part No.	UMY3N	UMZ2N	FMY3A	FMY4A	IMZ2A
Package	UMT5	UMT6	SMT5	SMT5	SMT6
Marking	Y3	Z2	Y3	Y4	Z2
Code	TR	TR	T148	T148	T108
Basic ordering unit (pieces)	3000	3000	3000	3000	3000

### ●Electrical characteristics (Ta=25°C)

Tr1						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	-60	—	—	V	I <sub>c</sub> =-50 μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	-50	—	—	V	I <sub>c</sub> =-1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	-6	—	—	V	I <sub>E</sub> =-50 μA
Collector cutoff current	I <sub>c0</sub>	—	—	-0.1	μA	V <sub>CB</sub> =-60V
Emitter cutoff current	I <sub>E0</sub>	—	—	-0.1	μA	V <sub>EB</sub> =-6V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	-0.5	V	I <sub>c</sub> /I <sub>E</sub> =-50mA/-5mA
DC current transfer ratio	h <sub>FE</sub>	120	—	560	—	V <sub>CE</sub> =-6V, I <sub>c</sub> =-1mA
Transition frequency	f <sub>T</sub>	—	140	—	MHz	V <sub>CE</sub> =-12V, I <sub>E</sub> =2mA, f=100MHz *
Output capacitance	C <sub>ob</sub>	—	4	5	pF	V <sub>CB</sub> =-12V, I <sub>E</sub> =0A, f=1MHz

\* Transition frequency of the device.

Tr2						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	60	—	—	V	I <sub>c</sub> =50 μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	50	—	—	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	6	—	—	V	I <sub>E</sub> =50 μA
Collector cutoff current	I <sub>c0</sub>	—	—	0.1	μA	V <sub>CB</sub> =60V
Emitter cutoff current	I <sub>E0</sub>	—	—	0.1	μA	V <sub>EB</sub> =7V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	0.4	V	I <sub>c</sub> /I <sub>E</sub> =50mA/5mA
DC current transfer ratio	h <sub>FE</sub>	120	—	560	—	V <sub>CE</sub> =6V, I <sub>c</sub> =1mA
Transition frequency	f <sub>T</sub>	—	180	—	MHz	V <sub>CE</sub> =12V, I <sub>E</sub> =-2mA, f=100MHz *
Output capacitance	C <sub>ob</sub>	—	2	3.5	pF	V <sub>CB</sub> =12V, I <sub>E</sub> =0A, f=1MHz

\* Transition frequency of the device.