

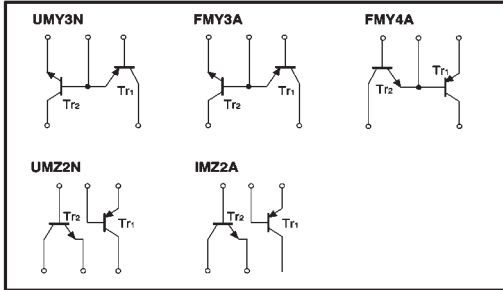
# Power management (dual transistors)

## 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	Vcbo	-60	60	V
Collector-emitter voltage	Vceo	-50	50	V
Emitter-base voltage	Vebo	-6	7	V
Collector current	Ic	-150	150	mA
Collector power dissipation	UMY3N, UMZ2N	150 (TOTAL)		mW *1
	FMY3A, FMY4A, IMZ2A	300 (TOTAL)		
Junction temperature	Tj	150		°C
Storage temperature	Tstg	-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	BVcbo	-60	—	—	V	Ic=-50 μA
Collector-emitter breakdown voltage	BVceo	-50	—	—	V	Ic=-1mA
Emitter-base breakdown voltage	BEbo	-6	—	—	V	Ie=-50 μA
Collector cutoff current	Icbo	—	—	-0.1	μA	Vcb=-60V
Emitter cutoff current	Iebo	—	—	-0.1	μA	Veb=-6V
Collector-emitter saturation voltage	VCE(sat)	—	—	-0.5	V	Ic/Ie=-50mA/-5mA
DC current transfer ratio	hFE	120	—	560	—	VCE=-6V, Ic=-1mA
Transition frequency	ft	—	140	—	MHz	VCE=-12V, Ie=2mA, f=100MHz * Vcb=-12V, Ie=0A, f=1MHz
Output capacitance	Cob	—	4	5	pF	Vcb=-12V, Ie=0A, f=1MHz

\* Transition frequency of the device.

Tr2

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVcbo	60	—	—	V	Ic=50 μA
Collector-emitter breakdown voltage	BVceo	50	—	—	V	Ic=1mA
Emitter-base breakdown voltage	BEbo	6	—	—	V	Ie=50 μA
Collector cutoff current	Icbo	—	—	0.1	μA	Vcb=60V
Emitter cutoff current	Iebo	—	—	0.1	μA	Veb=7V
Collector-emitter saturation voltage	VCE(sat)	—	—	0.4	V	Ic/Ie=50mA/5mA
DC current transfer ratio	hFE	120	—	560	—	VCE=6V, Ic=1mA
Transition frequency	ft	—	180	—	MHz	VCE=12V, Ie=-2mA, f=100MHz * Vcb=12V, Ie=0A, f=1MHz
Output capacitance	Cob	—	2	3.5	pF	Vcb=12V, Ie=0A, f=1MHz

\* Transition frequency of the device.