

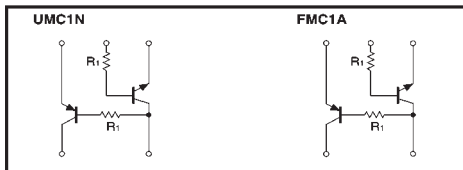
Power management (dual digital transistors)

UMC1N / FMC1A

●Features

1) Both the DTA143T chip and DTC143T chip in a UMT or SMT package.

●Circuit diagrams



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	50	V
Collector-emitter voltage	V _{CE0}	50	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _c	100	mA
Collector power dissipation	UMC1N	150 (TOTAL)	mW
	FMC1A	300 (TOTAL)	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55~+150	°C

*1 120mW per element must not be exceeded. *2 200mW per element must not be exceeded. PNP type negative symbols have been omitted.

●Package, marking, and packaging specifications

Part No.	UMC1N	FMC1A
Package	UMT5	SMT5
Marking	C1	C1
Code	TR	T148
Basic ordering unit (pieces)	3000	3000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	50	—	—	V	I _c =50/-50 μA
Collector-emitter breakdown voltage	BV _{CE0}	50	—	—	V	I _c =1/-1mA
Emitter-base breakdown voltage	BV _{EB0}	5	—	—	V	I _e =50/-50 μA
Collector cutoff current	I _{CB0}	—	—	0.5	μA	V _{CB} =50/-50V
Emitter cutoff current	I _{EB0}	—	—	0.5	μA	V _{EB} =4/-4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.3	V	I _c =5/-5mA, I _e =0.25/-0.25mA
DC current transfer ratio	h _{FE}	100	250	600	—	V _{CE} =5/-5V, I _c =1/-1mA
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10V, F _E =-5mA, f=100MHz *
Input resistance	R _i	3.29	4.7	6.11	kΩ	—

* Transition frequency of the device. PNP type negative symbols have been omitted.

(94S-815-AC143T)

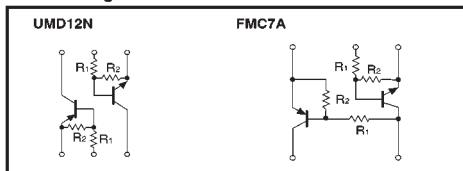
Power management (dual digital transistors)

UMD12N / FMC7A

●Features

1) Both the DTA144E and DTC144E in a UMT or SMT package.

●Circuit diagrams



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _{IN}	40	V
		-10	
Output current	I _c	100	mA
		30	
Power dissipation	UMD12N	150 (TOTAL)	mW
	FMC7A	300 (TOTAL)	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55~+150	°C

*1 120mW per element must not be exceeded. *2 200mW per element must not be exceeded. PNP type negative symbols have been omitted.

●Package, marking, and packaging specifications

Part No.	UMD12N	FMC7A
Package	UMT6	SMT5
Marking	D12	C7
Code	TR	T148
Basic ordering unit (pieces)	3000	3000

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I (off)}	—	—	0.5	V	V _{CC} =5/-5V, I _c =100/-100 μA
	V _{I (on)}	3	—	—	V	V _O =0.3/-0.3V, I _c =2/-2mA
Output voltage	V _{O (on)}	—	—	0.3	V	I _c =10/-10mA, I _e =0.5/-0.5mA
Input current	I _i	—	—	0.18	mA	V _i =5/-5V
Output current	I _{O (off)}	—	—	0.5	μA	V _{CC} =50/-50V, V _i =0V
DC current gain	G _i	68	—	—	—	I _c =5/-5mA, V _O =5/-5V
Transition frequency	f _T	—	250	—	MHz	V _{CE} =10/-10V, I _e =-5/5mA, f=100MHz *
Input resistance	R _i	32.9	47	61.1	kΩ	—
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	—	—

* Transition frequency of the device. PNP type negative symbols have been omitted.

(96-475-AC144E)