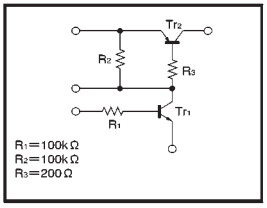
Power management (dual digital transistors)
FMQ2

●Features
1) Two digital transistors in a SMT package.
2) Up to 500 mA can be driven.
3) Low V_{CE}(sat) of drive transistors for low power dissipation.

●Circuit schematic



●Package, marking, and packaging specifications

Part No.	FMQ2
Package	SMT5
Marking	Q2
Code	T148
Basic ordering unit (pieces)	3000

●Absolute maximum ratings (Ta = 25℃)

DTr1

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	30	mA

DTr2

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−40	V
Collector-emitter voltage	V_{CEO}	−30	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−500	mA

Total

Parameter	Symbol	Limits	Unit
Power dissipation	Pd	300 (TOTAL)	mW ＊
Junction temperature	Tj	150	V
Storage temperature	Tstg	−55～+150	V

＊ 200mW per element must not be exceeded.

●Electrical characteristics (Ta = 25℃)

Tr1

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	30	—	—	V	I_C=1mA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=20V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	I_C=1mA , I_B=0.1mA
DC current transfer ratio	h_{FE}	270	—	—	—	V_{CE}=2V , I_C=1mA
Transition frequency	f_T	—	250	—	MHz	V_{CE}=5V , I_E=−5mA , f=50MHz ＊

＊Transition frequency of the device.

Tr2

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	−30	—	—	V	I_C=−1mA
Collector cutoff current	I_{CEO}	—	—	−0.5	μA	V_{CB}=−20V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−0.3	V	I_C=−100mA , I_B=−10mA
DC current transfer ratio	h_{FE}	120	—	—	—	V_{CE}=−2V , I_C=−100mA
Transition frequency	f_T	—	200	—	MHz	V_{CE}=−5V , I_E=50mA , f=50MHz ＊

＊Transition frequency of the device.

Resistor values

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Resistor 1	R_1	70	100	130	kΩ	—
Resistor 2	R_2	70	100	130	kΩ	—
Resistor 3	R_3	140	200	260	Ω	—

(96-552-FMQ2)