

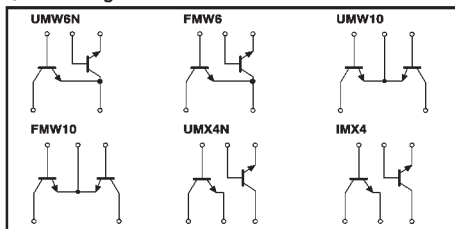
High transition frequency (dual transistors)

UMW6N / UMW10N / UMX4N / FMW6 / FMW10 / IMX4

●Features

- 1) Two 2SC3837K chips in a UMT or SMT package.
- 2) High transition frequency. ($f_T=1.5\text{GHz}$)
- 3) Low output capacitance. ($C_{ob}=0.95\text{pF}$)

●Circuit diagrams



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	$I_C=10\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	18	—	—	V	$I_C=1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	3	—	—	V	$I_E=10\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=10\text{V}$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB}=2\text{V}$
DC current transfer ratio	h_{FE}	27	—	270	—	$V_{CE}/I_C=10\text{V}/10\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C/I_B=20\text{mA}/4\text{mA}$
h_{FE} pairing	h_{FE1}/h_{FE2}	0.5	1	2	—	$V_{CE}/I_C=10\text{V}/10\text{mA}$
Transition frequency	f_T	600	1500	—	MHz	$V_{CE}/I_C=10\text{V}/10\text{mA}$, $f=200\text{MHz}$ *
Output capacitance	C_{ob}	—	0.95	1.6	pF	$V_{CB}/f=10\text{V}/1\text{MHz}$, $I_E=0\text{A}$

* Transition frequency of the device.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	18	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	UMW6N, UMW10N, UMX4N 150 (TOTAL) 300 (TOTAL)	mW *1 *2
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.

●Package, marking, and packaging specifications

Part No.	UMW6N	UMW10N	UMX4N	FMW6	FMW10	IMX4
Package	UMT5	UMT6	UMT6	SMT5	SMT6	SMT6
Marking	W6	W10	X4	W6	W10	X4
Code	TR	TR	TR	T148	T148	T108
Basic ordering unit (pieces)	3000	3000	3000	3000	3000	3000

(94S-404-C101)

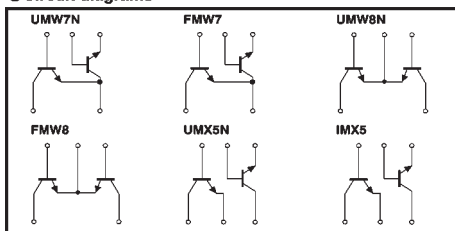
High transition frequency (dual transistors)

UMW7N / UMW8N / UMX5N / FMW7 / FMW8 / IMX5

●Features

- 1) Two 2SC3838K chips in a UMT or SMT package.
- 2) High transition frequency. ($f_T=3.2\text{GHz}$)
- 3) Low output capacitance. ($C_{ob}=0.9\text{pF}$)

●Circuit diagrams



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	20	—	—	V	$I_C=10\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	11	—	—	V	$I_C=1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	3	—	—	V	$I_E=10\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=10\text{V}$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB}=2\text{V}$
DC current transfer ratio	h_{FE}	27	—	270	—	$V_{CE}/I_C=10\text{V}/5\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C/I_B=10\text{mA}/5\text{mA}$
h_{FE} pairing	h_{FE1}/h_{FE2}	0.5	1	2	—	$V_{CE}/I_C=10\text{V}/5\text{mA}$
Transition frequency	f_T	1.4	3.2	—	GHz	$V_{CE}/I_C=10\text{V}/10\text{mA}$, $f=200\text{MHz}$ *
Output capacitance	C_{ob}	—	0.9	1.55	pF	$V_{CB}/f=10\text{V}/1\text{MHz}$, $I_E=0\text{A}$

* Transition frequency of the device.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	20	V
Collector-emitter voltage	V_{CEO}	11	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	UMW7N, UMW8N, UMX5N 150 (TOTAL) 300 (TOTAL)	mW *1 *2
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.

●Package, marking, and packaging specifications

Part No.	UMW7N	UMW8N	UMX5N	FMW7	FMW8	IMX5
Package	UMT5	UMT6	UMT6	SMT5	SMT6	SMT6
Marking	W7	W8	X5	W7	W8	X5
Code	TR	TR	TR	T148	T148	T108
Basic ordering unit (pieces)	3000	3000	3000	3000	3000	3000

(94S-407-C102)