

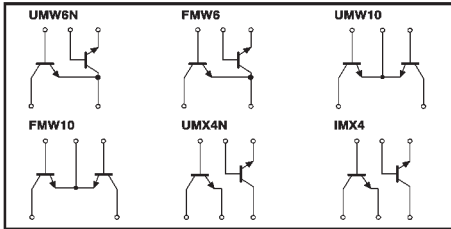
# High transition frequency (dual transistors)

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	$\mu\text{A}$	$V_{CB}=10\text{V}$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu\text{A}$	$V_{EB}=2\text{V}$
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.

(94S-404-C101)

●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	UMW6N, UMW10N, UMX4N FMW6, FMW10, IMX4	$P_C$	150 (TOTAL)
			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.

●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

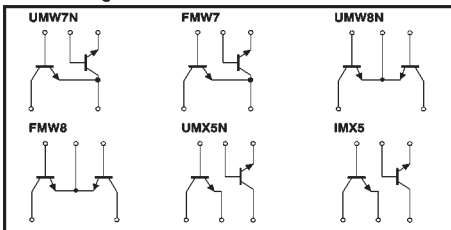
# High transition frequency (dual transistors)

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	$\mu\text{A}$	$V_{CB}=10\text{V}$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu\text{A}$	$V_{EB}=2\text{V}$
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.

(94S-407-C102)

●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	UMW7N, UMW8N, UMX5N FMW7, FMW8, IMX5	$P_C$	150 (TOTAL)
			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.

●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