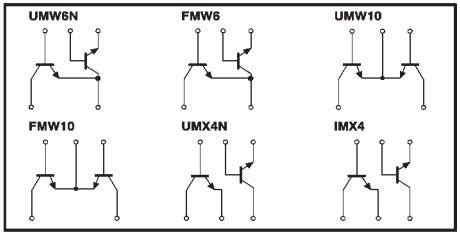
High transition frequency (dual transistors)

UMW6N / UMW10N / UMX4N / FMW6 / FMW10 / IMX4

●Features

1) Two 2SC3837K chips in a UMT or SMT package.
2) High transition frequency. (f_T=1.5GHz)
3) Low output capacitance. (Cob=0.95pF)

●Circuit diagrams



●Absolute maximum ratings (Ta=25℃)

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	Pc	150 (TOTAL)	mW *1
	FMW6, FMW10, IMX4		300 (TOTAL)	*2
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

*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

●Electrical characteristics (Ta=25℃)

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

* Transition frequency of the device.

(94S-404-C101)

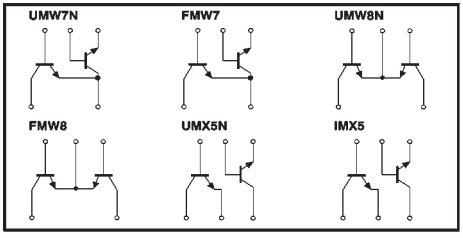
High transition frequency (dual transistors)

UMW7N / UMW8N / UMX5N / FMW7 / FMW8 / IMX5

●Features

1) Two 2SC3838K chips in a UMT or SMT package.
2) High transition frequency. (f_T=3.2GHz)
3) Low output capacitance. (Cob=0.9pF)

●Circuit diagrams



●Absolute maximum ratings (Ta=25℃)

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	Pc	150 (TOTAL)	mW *1
	FMW7, FMW8, IMX5		300 (TOTAL)	*2
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

*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

●Electrical characteristics (Ta=25℃)

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

* Transition frequency of the device.

(94S-407-C102)