

Transistors

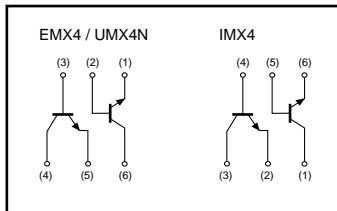
# High transition frequency (dual transistors)

## EMX4 / UMX4N / IMX4

●Features

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

●Equivalent circuits



●Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

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	EMX4 / UMX4N	150(TOTAL)	mW *1
	IMX4	300(TOTAL)	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

\*1 120mW per element must not be exceeded.  
\*2 200mW per element must not be exceeded.

●Package, marking, and packaging specifications

Type	EMX4	UMX4N	IMX4
Package	EMT6	UMT6	SMT6
Marking	X4	X4	X4
Code	T2R	TR	T108
Basic ordering unit (pieces)	8000	3000	3000

●Electrical characteristics ( $T_a=25^\circ\text{C}$ )

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	$I_c/I_E=20\text{mA}/4\text{mA}$
$h_{FE}$ 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.

●External dimensions (Units : mm)

