

Transistors

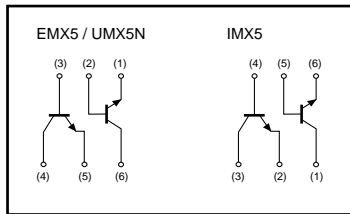
# High transition frequency (dual transistors)

## EMX5 / UMX5N / IMX5

●Features

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

●Equivalent circuits



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

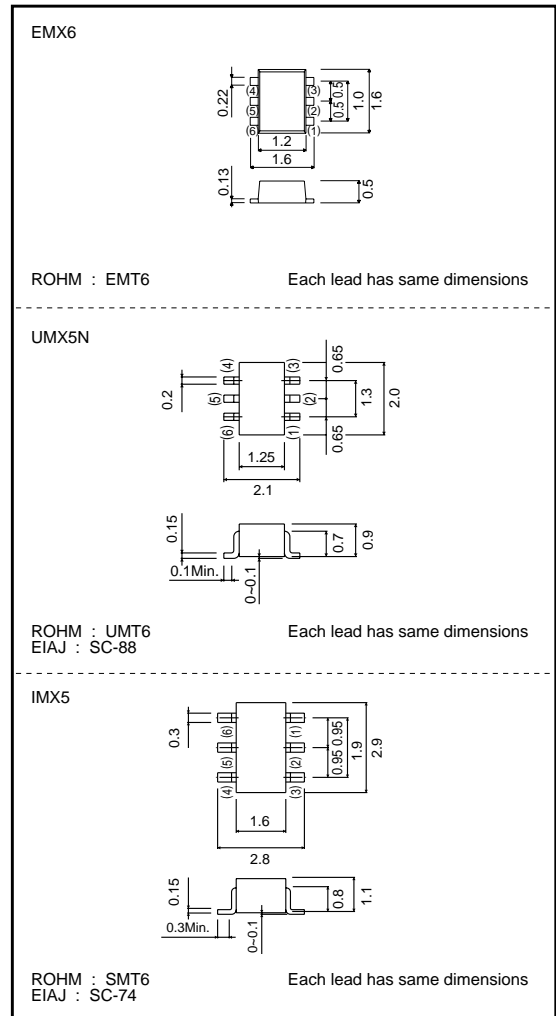
Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	20	V
Collector-emitter voltage	$V_{CE0}$	11	V
Emitter-base voltage	$V_{EB0}$	3	V
Collector current	$I_c$	50	mA
Collector power dissipation	EMX5 / UMX5N	150(TOTAL)	mW *1
	IMX5	300(TOTAL)	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage 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	EMX5	UMX5N	IMX5
Package	EMT5	UMT6	SMT6
Marking	X5	X5	X5
Code	T2R	TR	T108
Basic ordering unit (pieces)	8000	3000	3000

●External dimensions (Units : mm)



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	20	-	-	V	$I_c=10\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CE0}$	11	-	-	V	$I_c=1\text{mA}$
Emitter-base breakdown voltage	$BV_{EB0}$	3	-	-	V	$I_E=10\mu\text{A}$
Collector cutoff current	$I_{CB0}$	-	-	0.5	$\mu\text{A}$	$V_{CB}=10\text{V}$
Emitter cutoff current	$I_{EB0}$	-	-	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.