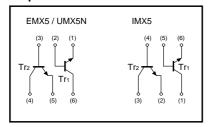
High transition frequency (dual transistors) EMX5 / UMX5N / IMX5

●Features

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

Equivalent circuits



● Absolute maximum ratings (Ta=25°C)

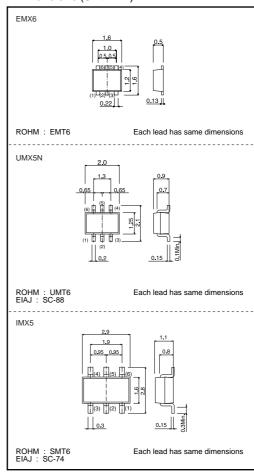
Parameter		Symbol	Limits	Unit	
Collector-base voltage		Vсво	20	V	
Collector-emitter voltage		Vceo	11	V	
Emitter-base voltage		Vebo	3	V	
Collector current		lc	50	mA	
Collector power dissipation	EMX5 / UMX5N	Pc	150(TOTAL)	mW *1	
	IMX5	FC	300(TOTAL)		
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	-55 to +150	°C	

^{*1 120}mW per element must not be exceeded

● Package, marking, and packaging specifications

Туре	EMX5	UMX5N	IMX5
Package	EMT5	UMT6	SMT6
Marking	X5	X5	X5
Code	T2R	TR	T108
Basic ordering unit (pieces)	8000	3000	3000

●Dimensions (Unit:mm)



This product might cause chip aging and breakdown under the large electrified environment. Please consider to design ESD protection circuit.

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^{*2 200}mW per element must not be exceeded

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	20	-	-	V	Ic=10μA
Collector-emitter breakdown voltage	BVceo	11	-	-	V	Ic=1mA
Emitter-base breakdown voltage	BVEBO	3	-	-	V	Iε=10μA
Collector cutoff current	Ісво	-	-	0.5	μΑ	Vcb=10V
Emitter cutoff current	Ієво	-	-	0.5	μΑ	V _{EB} =2V
DC current transfer ratio	hfe	56	-	120	-	Vce/Ic=10V/5mA
Collector-emitter saturation voltage	VcE(sat)	-	-	0.5	V	Ic/I _B =10mA/5mA
Transition frequency	fτ	1.4	3.2	-	GHz	Vce/Ie=10V/-10mA, f=500MHz *
Output capacitance	Cob	-	0.9	1.55	pF	Vcb/f=10V/1MHz, IE=0A

^{*}Transition frequency of the device.

•Electrical characteristics curves

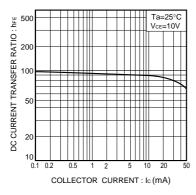


Fig.1 DC current gain vs. collector current

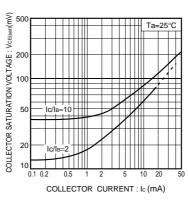


Fig.2 Collector-emitter saturation voltage vs. collector current

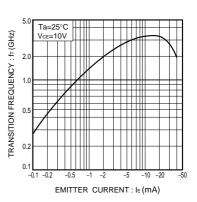


Fig.3 Gain bandwidth product vs. emitter current

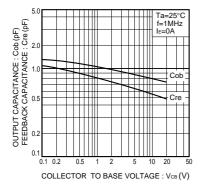


Fig.4 Capacitance vs. reverse bias voltage

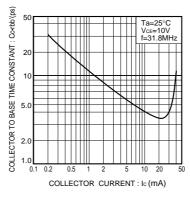


Fig.5 Collector to base time constant vs. collector current characteristics

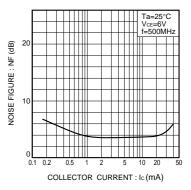


Fig.6 Noise factor vs. collector current characteristics

Rev.B

2/2

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Appendix1-Rev2.0

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