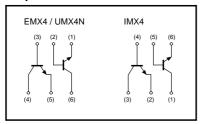
High transition frequency (dual transistors) EMX4 / UMX4N / IMX4

●Features

- 1) Two 2SC3837K chips in a EMT or UMT or SMT package.
- 2) High transition frequency. (f⊤=1.5GHz)
- 3) Low output capacitance. (Cob=0.9pF)

Equivalent circuits



● Absolute maximum ratings (Ta=25°C)

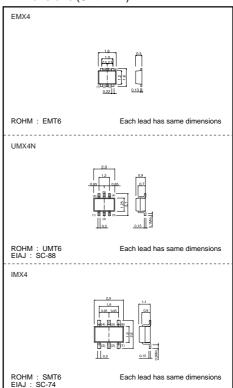
Parameter		Symbol	Limits	Unit	
Collector-base voltage		Vсво	30	V	
Collector-emitter voltage		Vceo	20	V	
Emitter-base voltage		Vebo	3	V	
Collector current		Ic	50	mA	
Collector power dissipation	EMX4 / UMX4N	Pc	150(TOTAL)	mW *1	
	IMX4	PC	300(TOTAL)		
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	-55 to +150	°C	

^{*1 120}mW per element must not be exceeded. *2 200mW per element must not be exceeded.

Package, marking, and packaging specifications

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

●Dimensions (Unit: mm)



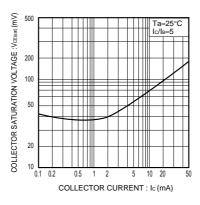
●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Collector-base breakdown voltage	ВУсво	30	-	-	V	Ic=10μA	
Collector-emitter breakdown voltage	BVceo	20	-	-	V	Ic=1mA	
Emitter-base breakdown voltage	ВУево	3	-	-	V	Iε=10μA	
Collector cutoff current	Ісво	-	-	0.5	μΑ	VcB=15V	
Emitter cutoff current	ІЕВО	-	-	0.5	μΑ	V _{EB} =2V	
DC current transfer ratio	hre	56	-	180	-	Vce/lc=10V/10mA	
Collector-emitter saturation voltage	VCE(sat)	-	-	0.5	V	Ic/I _B =20mA/4mA	
Transition frequency	f⊤	600	1500	-	MHz	Vce/le=10V/ -10mA, f=200MHz *	
Output capacitance	Cob	-	0.95	1.6	pF	VcB/f=10V/1MHz, IE=0A	
Collector-base time constant	rbb'∙Cc	-	6	13	ps	Vcв=10V, Ic=10mA , f=31.8МHz	
Noise factor	NF	-	4.5	-	dB	Vc=12V, lc=2mA , f=200MHz , Rq=50Ω	

^{*}Transition frequency of the device.

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





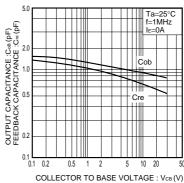
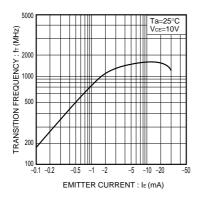
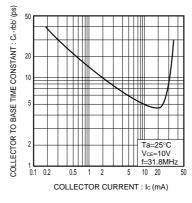


Fig.1 DC current gain vs. collector current

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

Fig.3 Capacitance vs. reverse bias voltage





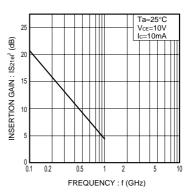
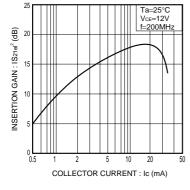
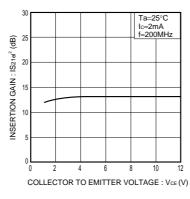


Fig.4 Gain bandwidth product vs. emitter current

Fig.5 Collector to base time constance vs. collector current

Fig.6 Insertion gain vs. frequency





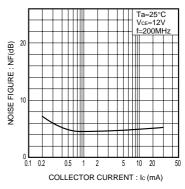


Fig.7 Insertion gain vs. collector current

Fig.8 Insertion gain vs. collector voltage

Fig.9 Noise factor vs. collector current



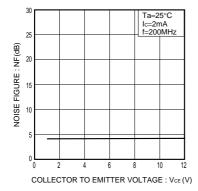


Fig.10 Noise factor vs. collector voltage

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