# General purpose transistors (dual transistors)

# EMX1 / UMX1N / IMX1

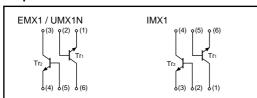
#### Features

- 1) Two 2SC2412K chips in a EMT or UMT or SMT
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

#### Structure

Epitaxial planar type NPN silicon transistor

### ●Equivalent circuit

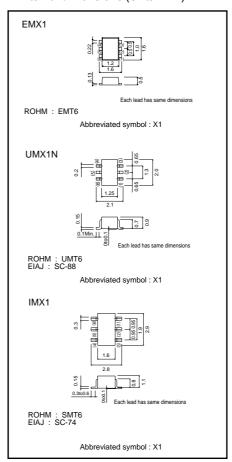


The following characteristics apply to both Tr1 and Tr2.

#### ◆Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit			
Collector-base voltage		Vсво	60	V			
Collector-emitter voltage		Vceo	50	V			
Emitter-base voltage		VEBO	7	V			
Collector current		Ic	150	mA			
Power dissipation	EMX1, UMX1N	Pc	150 (TOTAL)	*1 mW *2			
	IMX1	PC	300 (TOTAL)				
Junction temperature		Tj	150	°C			
Storage temperature		Tstg	-55~+150	°C			

### ●External dimensions (Units : mm)



<sup>\*1 120</sup>mW per element must not be exceeded. \*2 200mW per element must not be exceeded.

## ●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Collector-base breakdown voltage	ВУсво	60	-	-	V	Ic=50μA	
Collector-emitter breakdown voltage	BVceo	50	-	-	V	Ic=1mA	
Emitter-base breakdown voltage	ВУево	7	_	_	V	I <sub>E</sub> =50μA	
Collector cutoff current	Ісво	_	-	0.1	μА	Vcb=60V	
Emitter cutoff current	ІЕВО	_	-	0.1	μА	V <sub>EB</sub> =7V	
Collector-emitter saturation voltage	Vce (sat)	_	-	0.4	V	Ic/I <sub>B</sub> =50mA/5mA	
DC current transfer ratio	hfe	120	_	560	_	VcE=6V, Ic=1mA	
Transition frequency	f⊤	_	180	_	MHz	Vc=12V, I=-2mA, f=100MHz *	
Output capacitance	Cob	-	2	3.5	PF	Vcb=12V, IE=0A, f=1MHz	

Packaging specifications

	Package	Taping			
	Code	T2R	TN	T110	
Туре	Basic ordering unit (pieces)	8000	3000	3000	
EMX1		0	_	_	
UMX1N		_	0	_	
IMX1		_	_	0	

#### Electrical characteristic curves

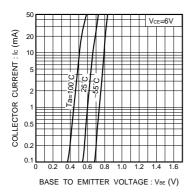


Fig.1 Grounded emitter propagation characteristics

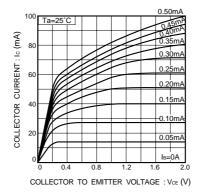


Fig.2 Grounded emitter output characteristics (1)

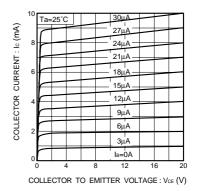


Fig.3 Grounded emitter output characteristics (II)

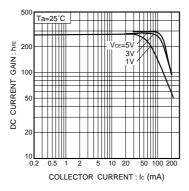


Fig.4 DC current gain vs. collector current (1)

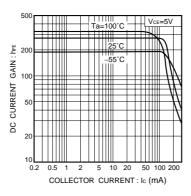


Fig.5 DC current gain vs. collector current (II)

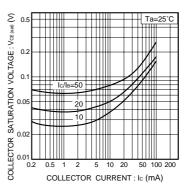


Fig.6 Collector-emitter saturation voltage vs. collector current

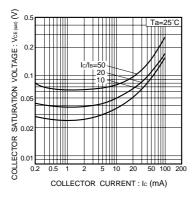


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

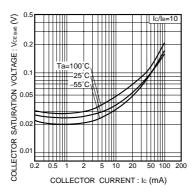


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

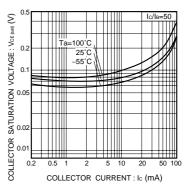


Fig.9 Collector-emitter saturation voltage vs. collector current ( III )

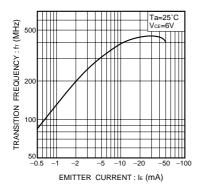


Fig.10 Gain bandwidth product vs. emitter current

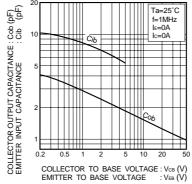


Fig.11 Collector output capacitance vs. collector-base voltage Emitter input capacitance vs. emitter-base voltage

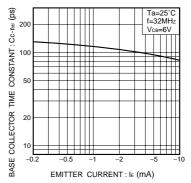


Fig.12 Base-collector time constant vs. emitter current

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