

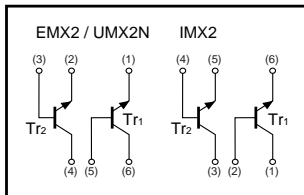
# General purpose (dual transistors)

## EMX2 / UMX2N / IMX2

●Features

- 1) Two 2SC2412AK chips in a EMT or UMT or SMT package.

●Equivalent circuits



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	60	V
Collector-emitter voltage	V <sub>CE0</sub>	50	V
Emitter-base voltage	V <sub>EB0</sub>	7	V
Collector current	I <sub>c</sub>	150	mA
Collector power dissipation	EMX2 / UMX2N	P <sub>c</sub> 150(TOTAL)	mW *1
	IMX2	300(TOTAL)	
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

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

●Package, marking, and packaging specifications

Type	EMX2	UMX2N	IMX2
Package	EMT6	UMT6	SMT6
Marking	X2	X2	X2
Code	T2R	TR	T108
Basic ordering unit (pieces)	8000	3000	3000

●External dimensions (Unit : mm)

EMX2

ROHM : EMT6      Each lead has same dimensions

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UMX2N

ROHM : UMT6      Each lead has same dimensions  
 EIAJ : SC-88

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IMX2

ROHM : SMT6      Each lead has same dimensions  
 EIAJ : SC-74

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	60	–	–	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	50	–	–	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	7	–	–	V	I <sub>E</sub> =50μA
Collector cutoff current	I <sub>CB0</sub>	–	–	0.1	μA	V <sub>CB</sub> =60V
Emitter cutoff current	I <sub>EB0</sub>	–	–	0.1	μA	V <sub>EB</sub> =7V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	–	–	0.4	V	I <sub>c</sub> /I <sub>b</sub> =50mA/5mA
DC current transfer ratio	h <sub>FE</sub>	120	–	560	–	V <sub>CE</sub> =6V, I <sub>c</sub> =1mA
Transition frequency	f <sub>T</sub>	–	180	–	MHz	V <sub>CE</sub> =12V, I <sub>E</sub> =-2mA, f=100MHz *
Output capacitance	C <sub>ob</sub>	–	2	3.5	pF	V <sub>CB</sub> =12V, I <sub>E</sub> =0mA, f=1MHz

\*Transition frequency of the device.

●Electrical characteristics curves

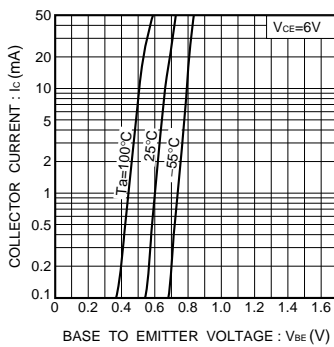


Fig.1 Grounded emitter propagation characteristics

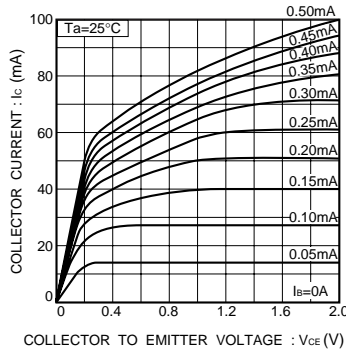


Fig.2 Grounded emitter output characteristics ( I )

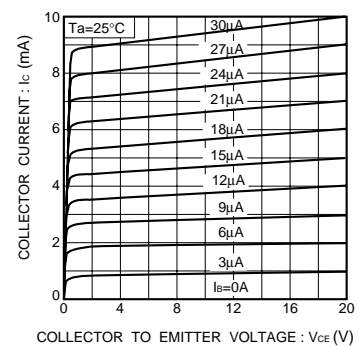


Fig.3 Grounded emitter output characteristics ( II )

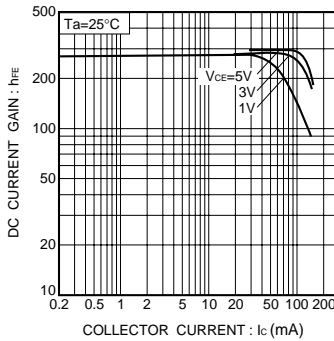


Fig.4 DC current gain vs. collector current ( I )

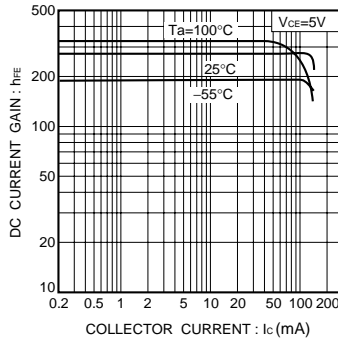


Fig.5 DC current gain vs. collector current ( II )

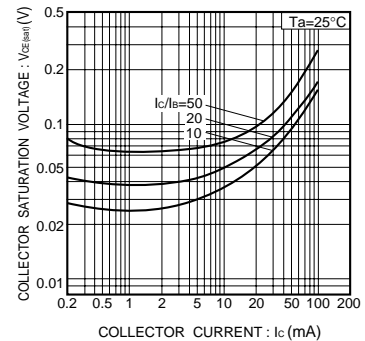


Fig.6 Collector-emitter saturation voltage vs. collector current

Transistors

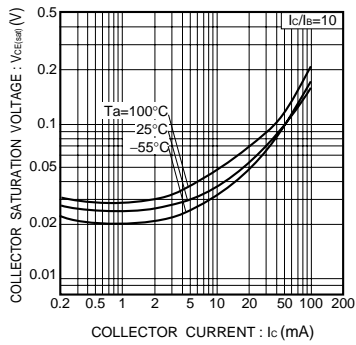


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

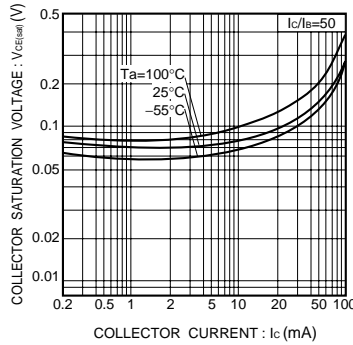


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

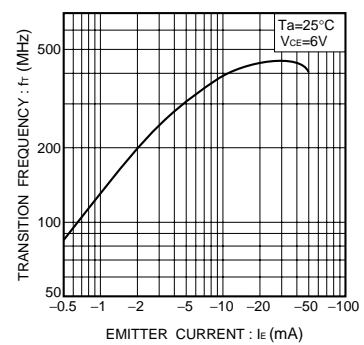


Fig.9 Gain bandwidth product vs. emitter current

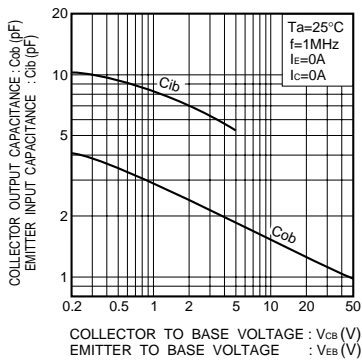


Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

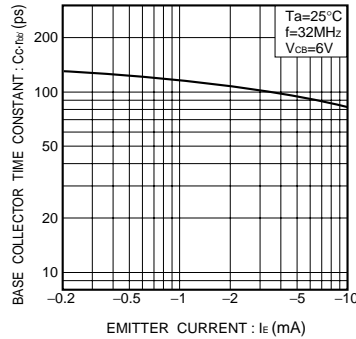


Fig.11 Base-collector time constant vs. emitter current

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