

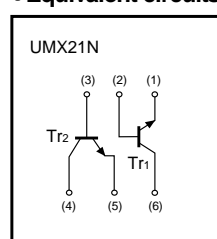
High transition frequency (dual transistors)

UMX21N

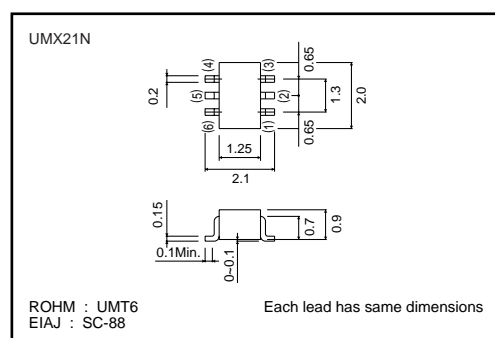
●Features

- 1) Two 2SC4713K chips in a UMT package.
- 2) Very low output-on resistance. (R_{on})
- 3) Low capacitance.

●Equivalent circuits



●External dimensions (Unit : mm)



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	12	V
Collector-emitter voltage	V_{CE0}	6	V
Emitter-base voltage	V_{EB0}	3	V
Collector current	I_c	50	mA
Collector power dissipation	P_c	150	mW *
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* 120mW per element must not be exceeded.

●Package, marking, and packaging specifications

Type	UMX21N
Package	UMT6
Marking	X21
Code	TR
Basic ordering unit (pieces)	3000

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	12	—	—	V	$I_c=10\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CE0}	6	—	—	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	μA	$V_{CB}=10\text{V}$
Emitter cutoff current	I_{EB0}	—	—	0.5	μA	$V_{EB}=2\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_c/I_e=10\text{mA}/1\text{mA}$
DC current transfer ratio	h_{FE}	270	—	560	—	$V_{CE}/I_c=5\text{V}/10\text{mA}$
Transition frequency	f_r	300	800	—	MHz	$V_{CE}=5\text{V}$, $I_e=-10\text{mA}$, $f=200\text{MHz}$
Output capacitance	C_{ob}	—	1	1.7	pF	$V_{CB}=10\text{V}$, $I_e=0\text{A}$, $f=1\text{MHz}$
Output-on resistance	R_{on}	—	2	—	Ω	$I_b=3\text{mA}$, $V_i=100\text{mVrms}$, $f=500\text{kHz}$

Transistors

●Electrical characteristics curves

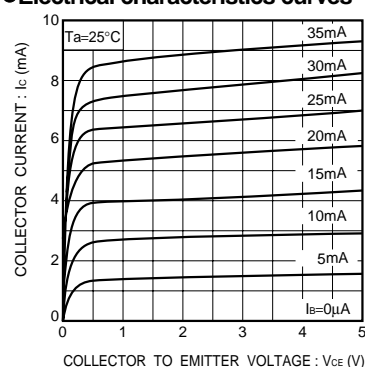


Fig.1 Grounded emitter output characteristics (I)

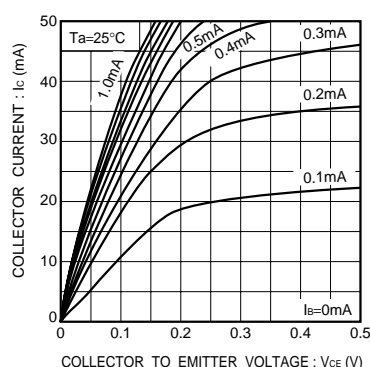


Fig.2 Grounded emitter output characteristics (II)

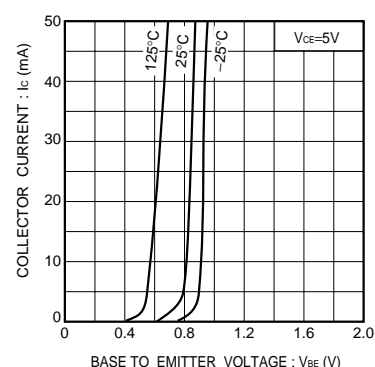


Fig.3 Grounded emitter propagation characteristics

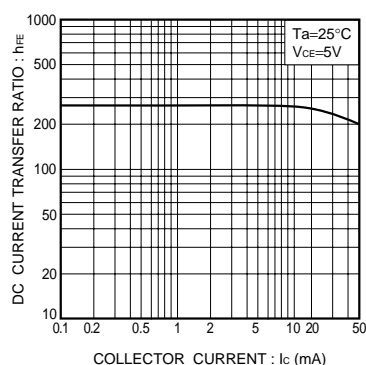


Fig.4 DC current gain vs. collector current

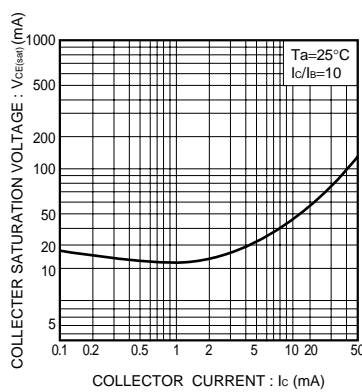


Fig.5 Collector-emitter saturation voltage vs. collector current

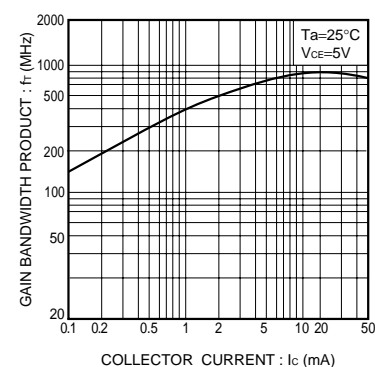


Fig.6 Gain bandwidth product vs. collector current

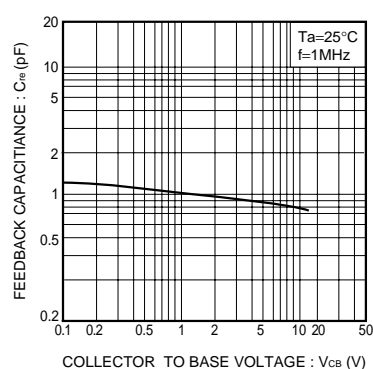


Fig.7 Collector output capacitance vs. voltage

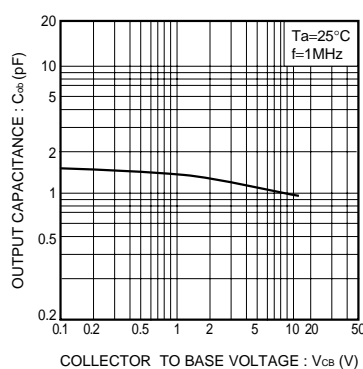


Fig.8 Back capacitance voltage

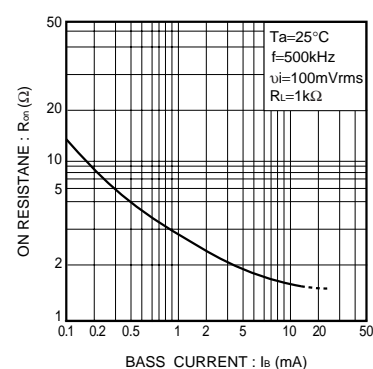


Fig.9 Output-on resistance vs. base current

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