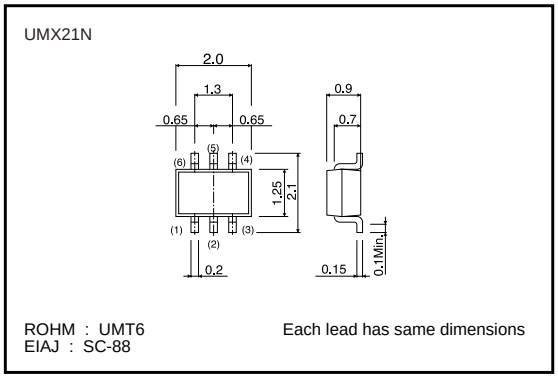
High transition frequency (dual transistors)

UMX21N

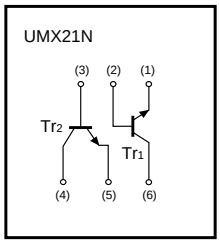
●Features

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

●Dimensions (Unit : mm)



●Equivalent circuits



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	12	V	
Collector-emitter voltage	V_{CEO}	6	V	
Emitter-base voltage	V_{EBO}	3	V	
Collector current	I_C	50	mA	
Collector power dissipation	P_C	150	mW	*
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	−55 to +150	°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 (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	12	–	–	V	I_C=10μA
Collector-emitter breakdown voltage	BV_{CEO}	6	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	3	–	–	V	I_E=10μA
Collector cutoff current	I_{CBO}	–	–	0.5	μA	V_{CB}=10V
Emitter cutoff current	I_{EBO}	–	–	0.5	μA	V_{EB}=2V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.3	V	I_C/I_B=10mA/1mA
DC current transfer ratio	h_{FE}	270	–	560	–	V_{CE}/I_C=5V/10mA
Transition frequency	f_T	300	800	–	MHz	V_{CE}=5V, I_E= −10mA, f=200MHz
Output capacitance	Cob	–	1	1.7	pF	V_{CB}=10V, I_E=0A, f=1MHz
Output-on resistance	Ron	–	2	–	Ω	I_B=3mA, V_I=100mVrms, f=500kHz

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

●**Electrical characteristics curves**

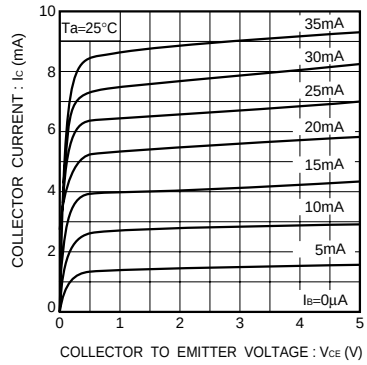


Fig.1 Grounded emitter output characteristics (Ⅰ)

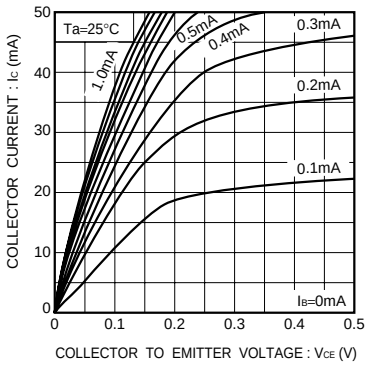


Fig.2 Grounded emitter output characteristics (Ⅱ)

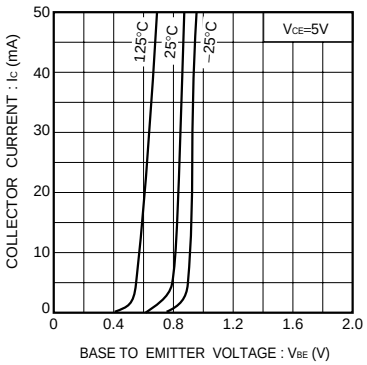


Fig.3 Grounded emitter propagation characteristics

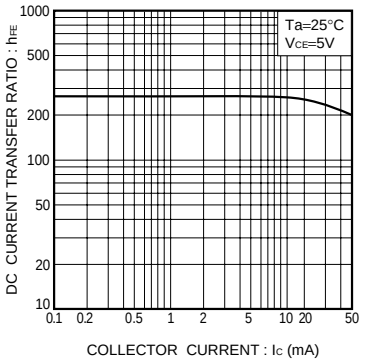


Fig.4 DC current gain vs. collector current

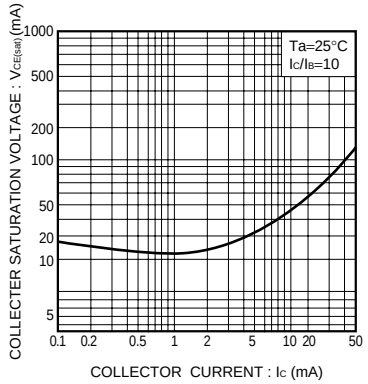


Fig.5 Collector-emitter saturation voltage vs. collector current

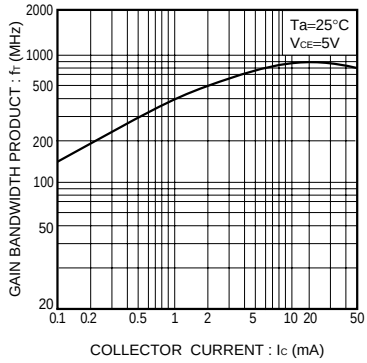


Fig.6 Gain bandwidth product vs. collector current

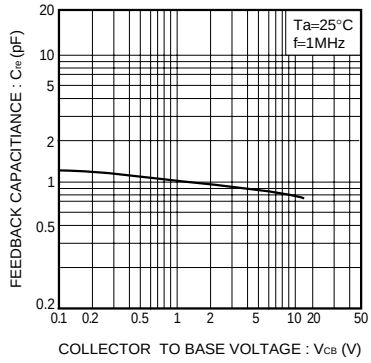


Fig.7 Collector output capacitance vs. voltage

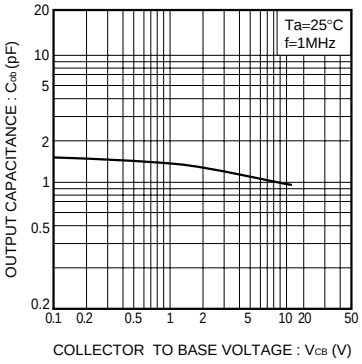


Fig.8 Back capacitance voltage

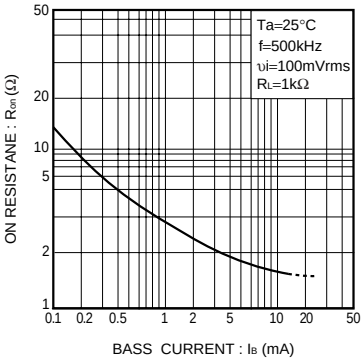


Fig.9 Output-on resistance vs. base current

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