

# High frequency amplifier transistor, RF switching (6V, 50mA)

2SC4774 / 2SC4713K

●Features

- 1) Very low output-on resistance (Ron).
- 2) Low capacitance.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	12	V
Collector-emitter voltage	V <sub>CE0</sub>	6	V
Emitter-base voltage	V <sub>EB0</sub>	3	V
Collector current	I <sub>c</sub>	50	mA
Collector power dissipation	P <sub>c</sub>	0.2	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

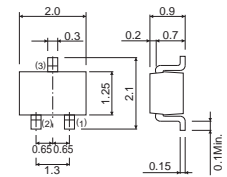
●Packaging specifications and h<sub>FE</sub>

Type	2SC4774	2SC4713K
Package	UMT3	SMT3
h <sub>FE</sub>	S	S
Marking	BM*	BM*
Code	T106	T146
Basic ordering unit (pieces)	3000	3000

\*Denotes h<sub>FE</sub>

●Dimensions (Unit : mm)

2SC4774

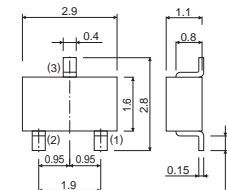


Each lead has same dimensions

ROHM : UMT3  
EIAJ : SC-70

- (1) Emitter
- (2) Base
- (3) Collector

2SC4713K



Each lead has same dimensions

ROHM : SMT3  
EIAJ : SC-59

- (1) Emitter
- (2) Base
- (3) Collector

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	12	-	-	V	I <sub>c</sub> =10μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	6	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	3	-	-	V	I <sub>E</sub> =10μA
Collector cutoff current	I <sub>cbo</sub>	-	-	0.5	μA	V <sub>CB</sub> =10V
Emitter cutoff current	I <sub>EBO</sub>	-	-	0.5	μA	V <sub>EB</sub> =2V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>c</sub> /I <sub>B</sub> =10mA/1mA
DC current transfer ratio	h <sub>FE</sub>	180	-	560	-	V <sub>CE</sub> /I <sub>c</sub> =5V/5mA
Transition frequency	f <sub>r</sub>	300	800	-	MHz	V <sub>CE</sub> =5V, I <sub>E</sub> =-10mA, f=200MHz
Output capacitance	C <sub>ob</sub>	-	1	1.7	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz
Output-on resistance	R <sub>on</sub>	-	2	-	Ω	I <sub>B</sub> =3mA, V <sub>i</sub> =100mVrms, f=500kHz

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

●Electrical characteristic curves

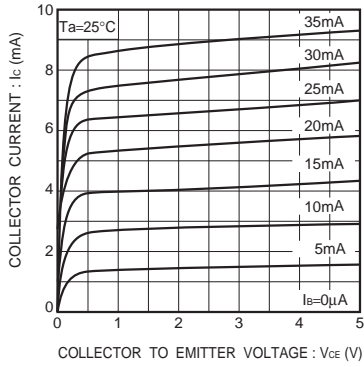


Fig.1 Grounded emitter output characteristics ( I )

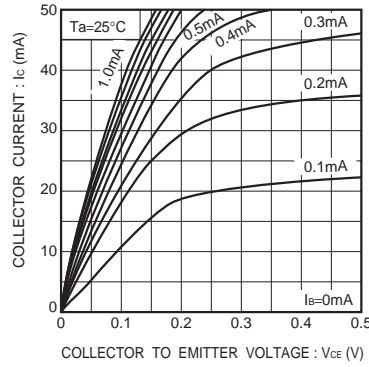


Fig.2 Grounded emitter output characteristics ( II )

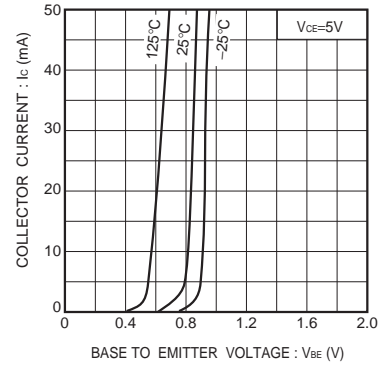


Fig.3 Grounded emitter propagation characteristics

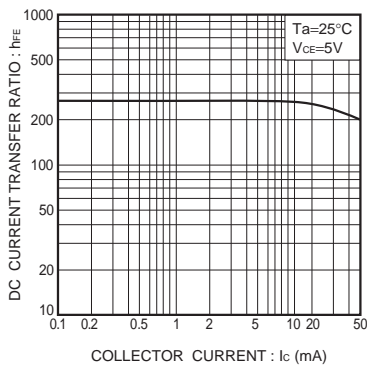


Fig.4 DC current gain vs. collector current

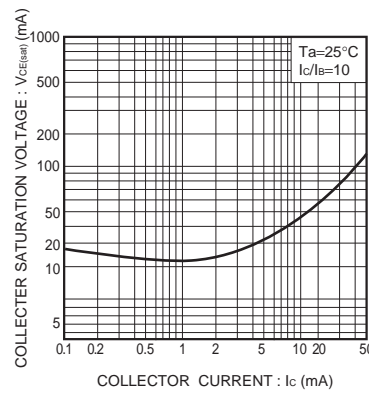


Fig.5 Collector-emitter saturation voltage vs. collector current

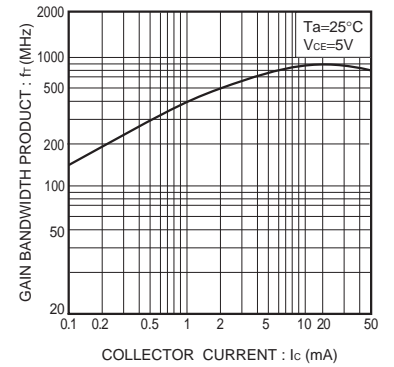


Fig.6 Gain bandwidth product vs. collector current

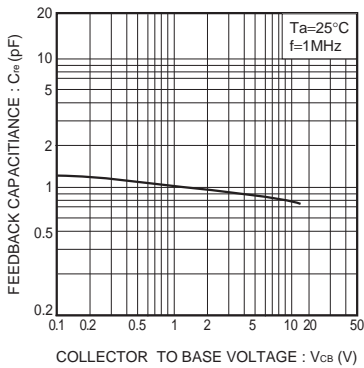


Fig.7 Collector output capacitance vs. voltage

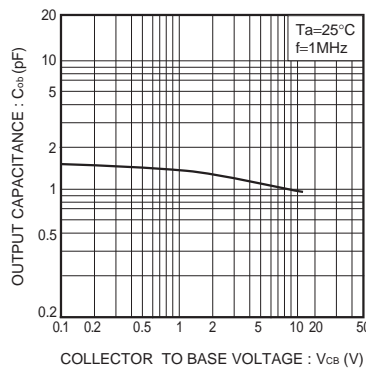


Fig.8 Back capacitance voltage

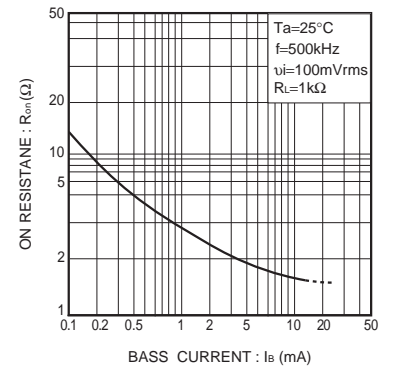


Fig.9 Output-on resistance vs. base current

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