General purpose small signal amplifier (50V, 0.15A)

2SC4081UB

Data Sheet

●Applications

General purpose small signal amplifier

●Features

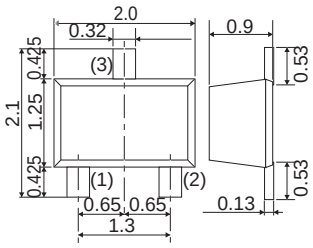
1) Low Cob.
   Cob=2.0pF (Typ.)
2) Complements the 2SA1576UB.

●Structure

NPN silicon epitaxial planar transistor

●Dimensions (Unit : mm)

UMT3F



Each lead has same dimensions

(1) Base
(2) Emitter
(3) Collector
* = Denotes h_{FE}

Abbreviated symbol : B*

●Absolute maximum (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	150	mA
	I_{CP} *1	200	mA
Power dissipation	P_D *2	200	mW
Junction temperature	Tj	150	°C
Range of storage temperature	Tstg	−55 to +150	°C

*1 Pw=1ms Single pulse
*2 Each terminal mounted on a recommended land

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	50	–	–	V	I_C=1mA
Collector-base breakdown voltage	BV_{CBO}	60	–	–	V	I_C=50μA
Emitter-base breakdown voltage	BV_{EBO}	7	–	–	V	I_E=50μA
Collector cutoff current	I_{CBO}	–	–	100	nA	V_{CB}=60V
Emitter cutoff current	I_{EBO}	–	–	100	nA	V_{EB}=7V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	400	mV	I_C/I_B=50mA/5mA
DC current gain	h_{FE}	120	–	560	–	V_{CE}=6V, I_C=1mA
Transition frequency	f_T	–	180	–	MHz	V_{CE}=12V, I_E=−2mA, f=100MHz
Output capacitance	Cob	–	2.0	3.5	pF	V_{CB}=12V, I_E=0A, f=1MHz

h_{FE} rank categories

Rank	Q	R	S
h_{FE}	120 to 270	180 to 390	270 to 560

●Electrical characteristic curves

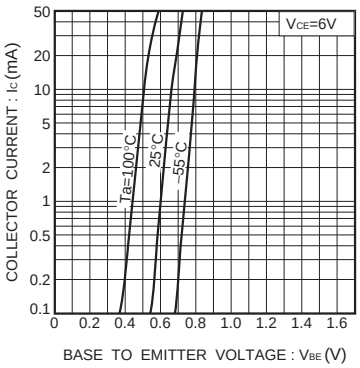


Fig.1 Grounded emitter propagation characteristics

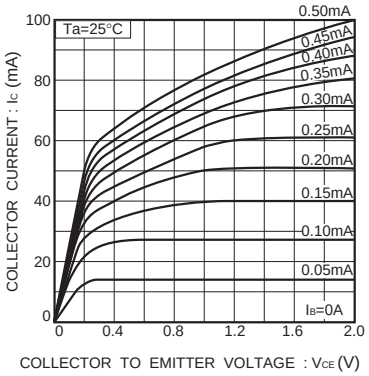


Fig.2 Grounded emitter output characteristics (I)

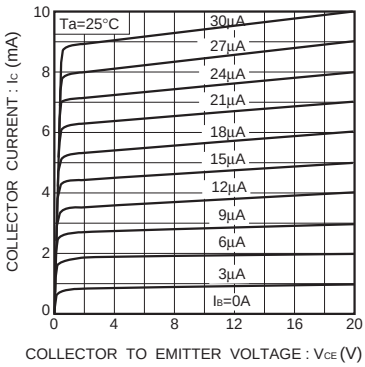


Fig.3 Grounded emitter output characteristics (II)

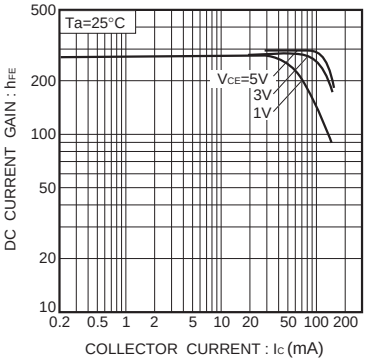


Fig.4 DC current gain vs. collector current (I)

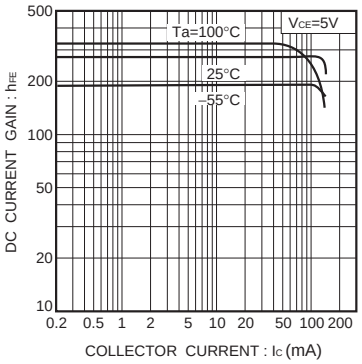


Fig.5 DC current gain vs. collector current (II)

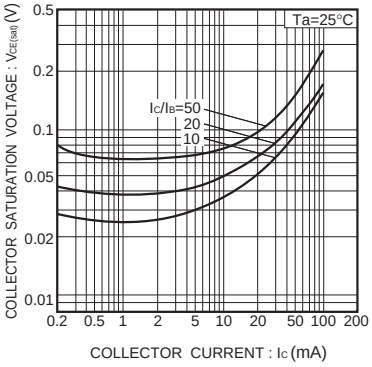


Fig. 6 Collector-emitter saturation voltage vs. collector current

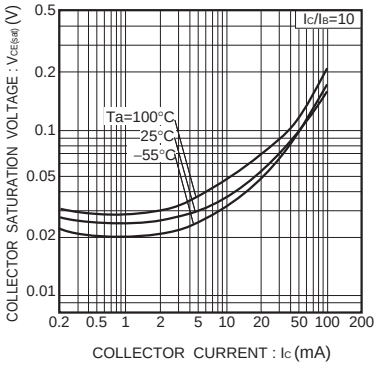


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

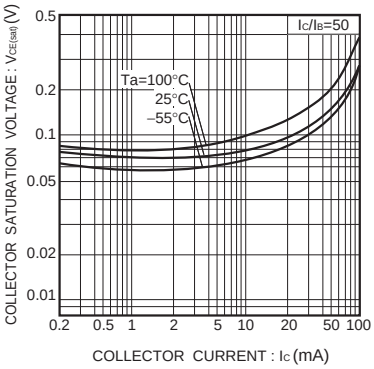


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

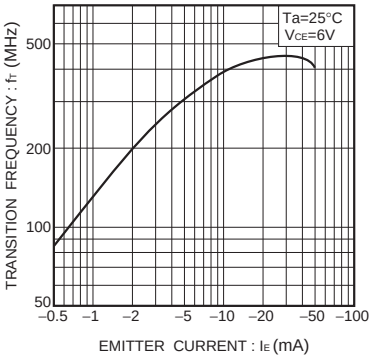


Fig.9 Gain bandwidth product vs. emitter current

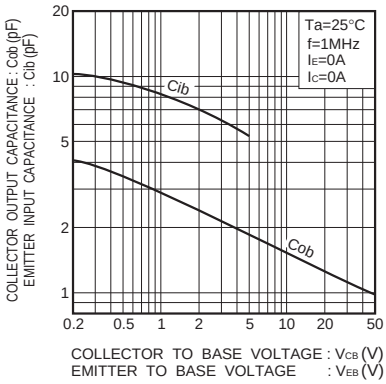


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

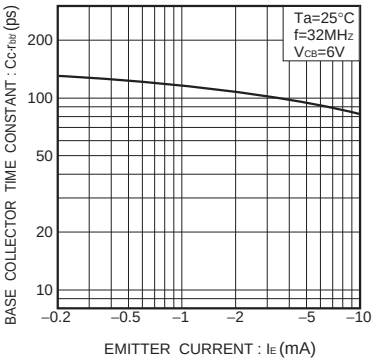


Fig.11 Base-collector time constant vs. emitter current

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