

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

2SA1576UB

●Applications

General purpose small signal amplifier.

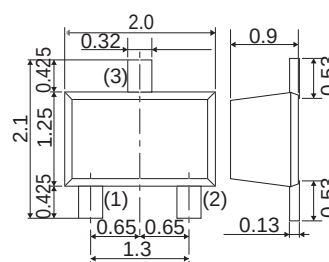
●Features

- 1) Excellent h_{FE} linearity.
- 2) Complements the 2SC4081UB.

●Structure

PNP silicon epitaxial planar transistor.

●Dimensions (Unit : mm)

UMT3F


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

 * = Denotes h_{FE}

Abbreviated symbol : F *

●Absolute maximum ratings (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}	-6	V
Collector current	I_C	-150	mA
	I_{CP} *1	-200	mA
Power dissipation	P_D *2	200	mW
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

 *1 $P_w=1ms$ 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	$I_C = -50\mu A$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	-	-	-100	nA	$V_{CB} = -60V$
Emitter cutoff current	I_{EBO}	-	-	-100	nA	$V_{EB} = -6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.5	V	$I_C/I_E = -50mA/-5mA$
DC current gain	h_{FE}	120	-	390	-	$V_{CE} = -6V, I_C = -1mA$
Transition frequency	f_T	-	140	-	MHz	$V_{CE} = -12V, I_E = 2mA, f = 100MHz$
Output capacitance	C_{ob}	-	4.0	5.0	pF	$V_{CB} = -12V, I_E = 0A, f = 1MHz$

hFE rank categories

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

●Electrical characteristic curves

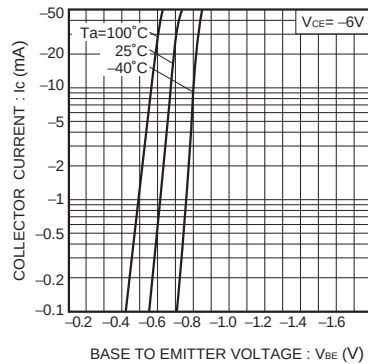


Fig.1 Grounded emitter propagation characteristics

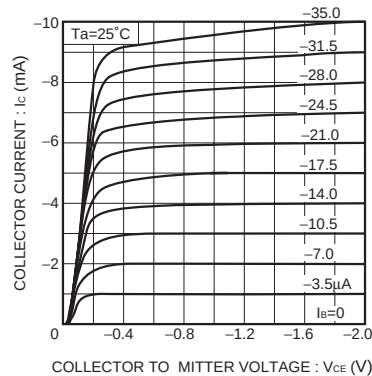


Fig.2 Grounded emitter output characteristics (I)

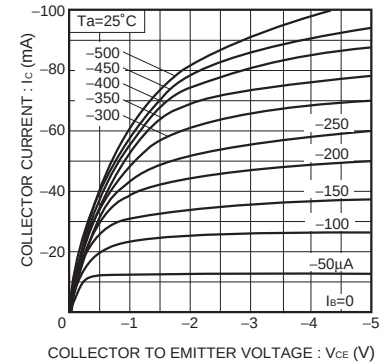


Fig.3 Grounded emitter output characteristics (II)

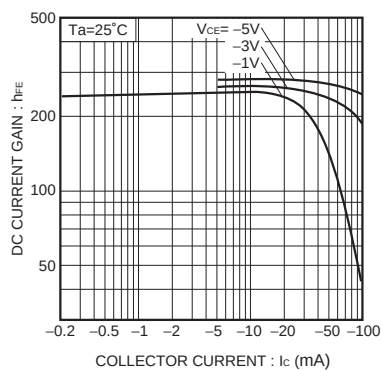


Fig.4 DC current gain vs. collector current (I)

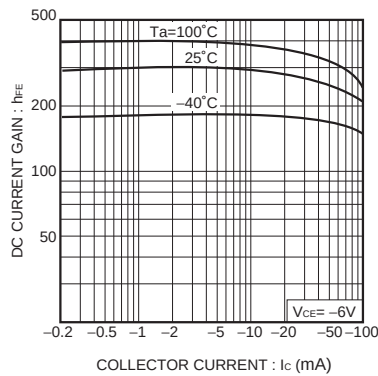


Fig.5 DC current gain vs. collector current (II)

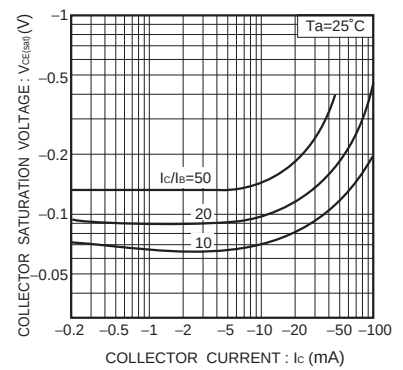


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

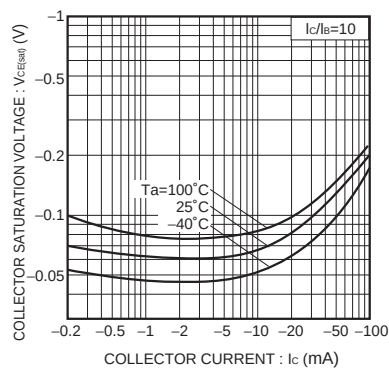


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

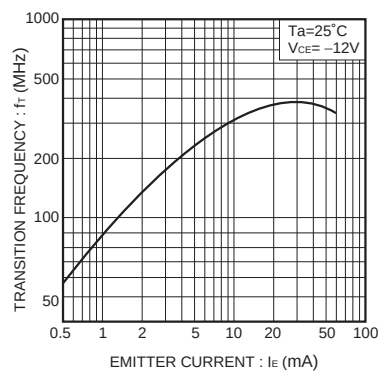
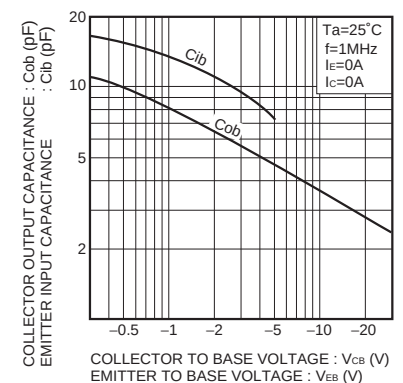


Fig.8 Gain bandwidth product vs. emitter current

Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

Notes

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