

Medium Power Transistor (-32V, -0.5A)

2SA1577

●Features

- 1) Large I_C .
 $I_{C\text{MAX.}} = -500\text{mA}$
- 2) Low $V_{CE(\text{sat})}$. Ideal for low-voltage operation.
- 3) Complements the 2SC4097.

●Structure

Epitaxial planer type
PNP silicon transistor

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-40	V
Collector-emitter voltage	V_{CEO}	-32	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-0.5	A *
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

* P_C MAX. must not be exceeded.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-40	—	—	V	$I_C = -100\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	-32	—	—	V	$I_C = -1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	-5	—	—	V	$I_E = -100\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	-1	μA	$V_{CB} = -20\text{V}$
Emitter cutoff current	I_{EBO}	—	—	-1	μA	$V_{EB} = -4\text{V}$
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	-0.6	V	$I_C/I_E = -300\text{mA}/-30\text{mA}$
DC current transfer ratio	h_{FE}	120	—	390	—	$V_{CE} = -3\text{V}$, $I_C = -100\text{mA}$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = -5\text{V}$, $I_E = 20\text{mA}$, $f = 100\text{MHz}$
Output capacitance	C_{ob}	—	7	—	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

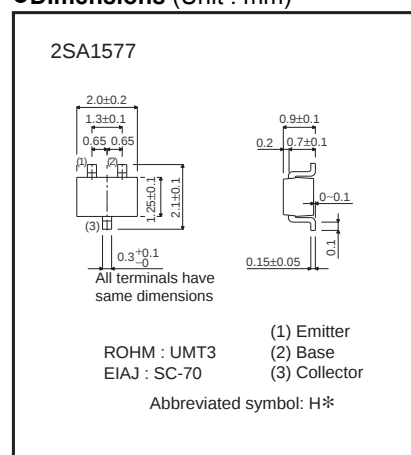
●Packaging specifications

Type	h_{FE}	Package	Taping
		Code	T106
		Basic ordering unit (pieces)	3000
2SA1577	QR		○

h_{FE} values are classified as follows.

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

●Dimensions (Unit : mm)



* Denotes h_{FE}

●Electrical characteristic curves

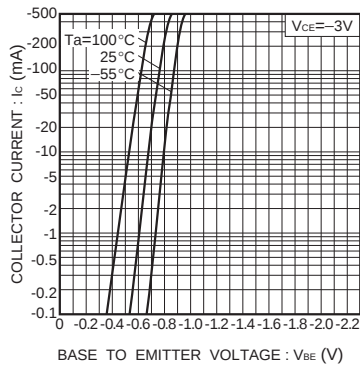


Fig.1 Grounded emitter propagation

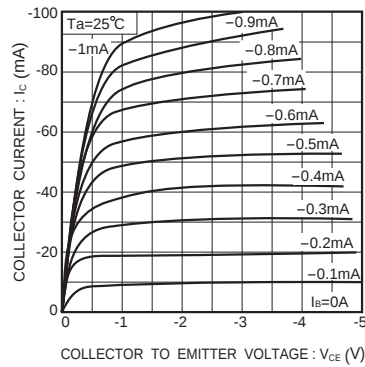


Fig.2 Grounded emitter output characteristics (I)

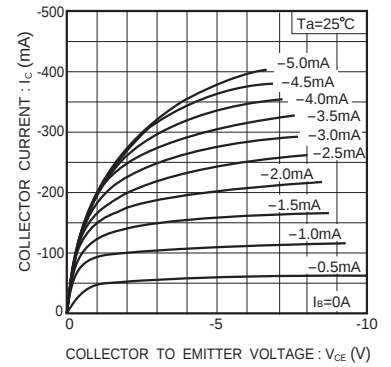


Fig.3 Ground emitter output characteristics (II)

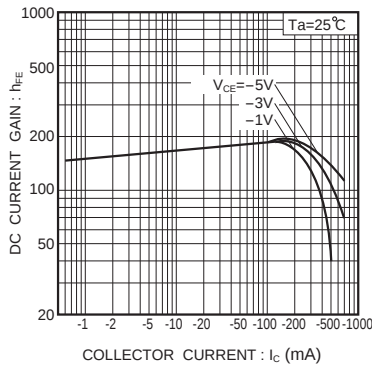


Fig.4 DC current gain vs. collector current (I)

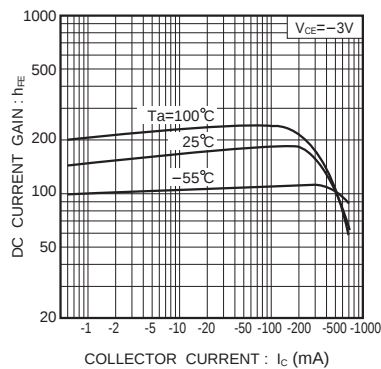


Fig.5 DC current gain vs. collector current (II)

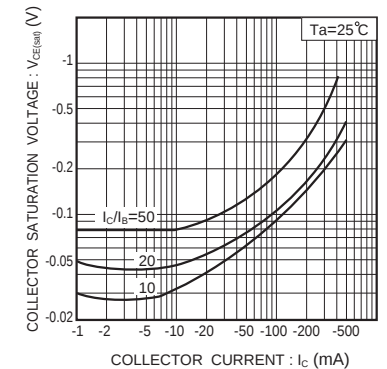


Fig.6 Collector emitter saturation voltage vs. collector current (I)

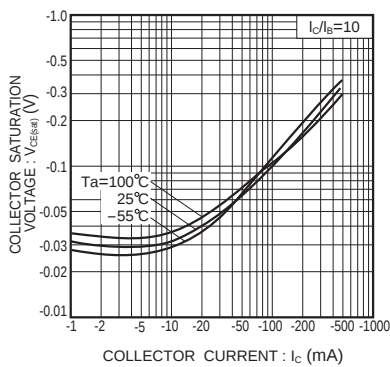


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

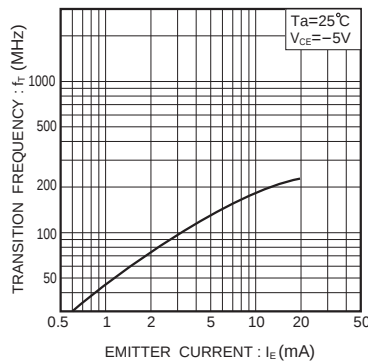


Fig.8 Gain bandwidth product vs. emitter current

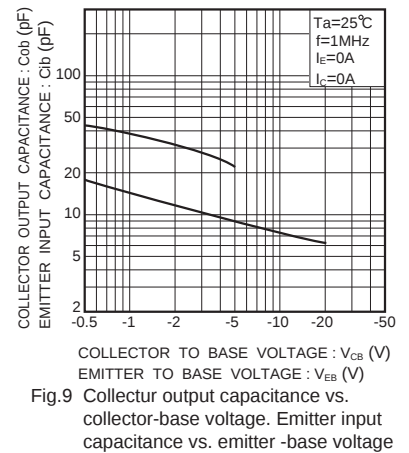


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

Notes

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