

Medium Power Transistor (32V, 0.5A)

2SC4097

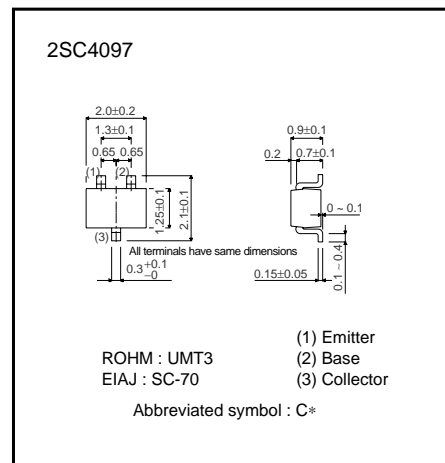
●Features

- 1) High $I_{CMax.}$
 $I_{CMax.} = 0.5A$
- 2) Low $V_{CE(sat)}$.
Optimal for low voltage operation.
- 3) Complements the 2SA1577.

●Structure

Epitaxial planar type
NPN silicon transistor

●External dimensions (Units : mm)



* Denotes h_{FE}

●Absolute maximum ratings ($T_a = 25^\circ C$)

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	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

* P_C must not be exceeded.

Transistors

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	40	–	–	V	I _c = 100μA
Collector-emitter breakdown voltage	BV _{CEO}	32	–	–	V	I _c = 1mA
Emitter-base breakdown voltage	BV _{EBO}	5	–	–	V	I _E = 100μA
Collector cutoff current	I _{cBO}	–	–	1	μA	V _{CB} = 20V
Emitter cutoff current	I _{EBO}	–	–	1	μA	V _{EB} = 4V
DC current transfer ratio	h _{FE}	120	–	390	–	V _{CE} = 3V, I _c = 10mA
Collector-emitter saturation voltage	V _{CE(sat)}	–	–	0.6	V	I _c /I _B = 500mA/50mA
Transition frequency	f _T	–	250	–	MHz	V _{CE} = 5V, I _E = –20mA, f = 100MHz
Output capacitance	C _{ob}	–	6.5	–	pF	V _{CB} = 10V, I _E = 0A, f = 1MHz

●Packaging Specifications and h_{FE}

Type	h _{FE}	Package	Taping
2SC4097	QR		○
		Code	T106
		Basic ordering unit (pieces)	3000

h_{FE} values are classified as follows:

Item	Q	R
h _{FE}	120 to 270	180 to 390

●Electrical characteristic curves

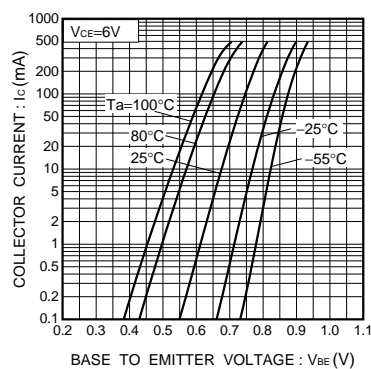


Fig.1 Grounded emitter propagation characteristics

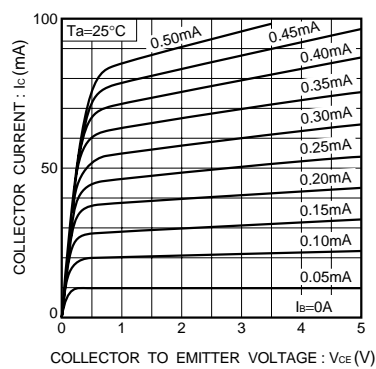


Fig.2 Grounded emitter output characteristics (I)

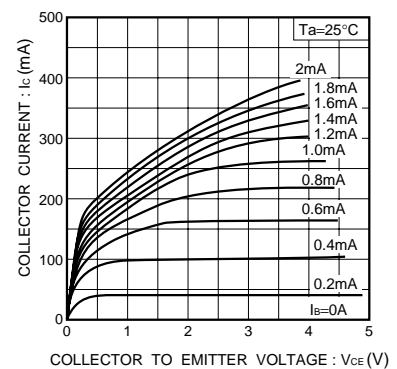


Fig.3 Grounded emitter output characteristics (II)

Transistors

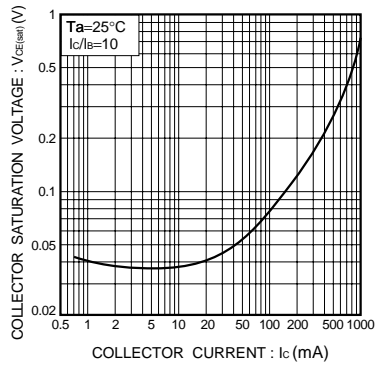


Fig.4 Collector-emitter saturation voltage vs. collector current

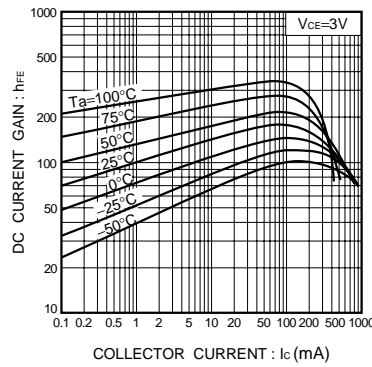


Fig.5 DC current gain vs. collector current

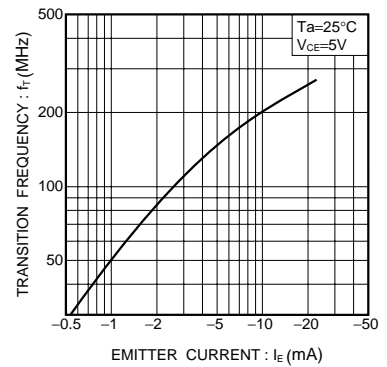


Fig.6 Gain bandwidth product vs. emitter current

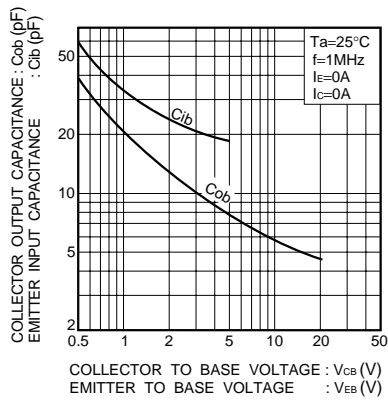


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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