AEC-Q101 Qualified

Medium Power Transistor (32V, 0.5A)

2SC4097FRA

●**Features**

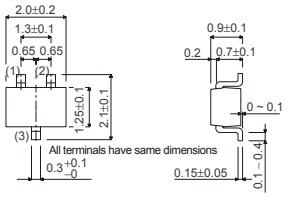
1) High $I_{CMax.}$
   $I_{CMax.}$ = 0.5A
2) Low $V_{CE(sat)}$.
   Optimal for low voltage operation.
3) Complements the 2SA1577FRA

●**Structure**

Epitaxial planar type
NPN silicon transistor

●**External dimensions** (Units : mm)

2SC4097FRA



ROHM : UMT3
EIAJ : SC-70

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

Abbreviated symbol : C∗

∗ Denotes h_{FE}

●**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	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

∗ P_C 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 = 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	Cob	–	6.5	–	pF	V_{CB} = 10V, I_E = 0A, f = 1MHz

●**Packaging Specifications and h_{FE}**

Type	h_{FE}	Package	Taping
		Code	T106
		Basic ordering unit (pieces)	3000
2SC4097FRA	QR		○

h_{FE} values are classified as follows:

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

●**Electrical characteristic curves**

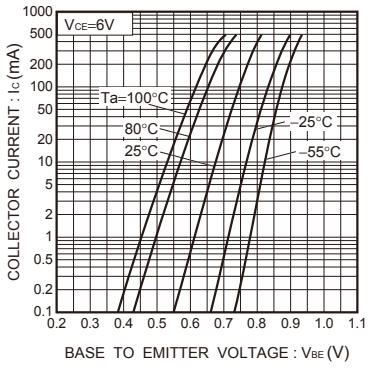


Fig.1 Grounded emitter propagation characteristics

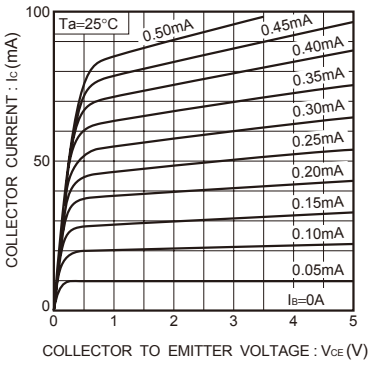


Fig.2 Grounded emitter output characteristics (Ⅰ)

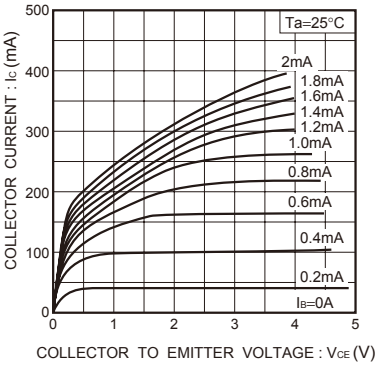


Fig.3 Grounded emitter output characteristics(Ⅱ)

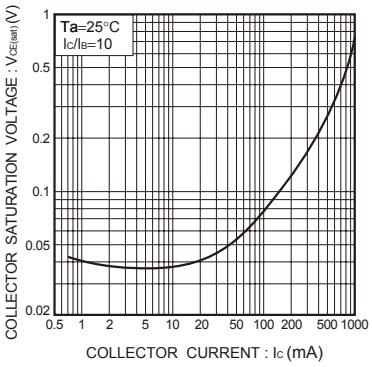


Fig.4 Collector-emitter saturation voltage vs. collector current

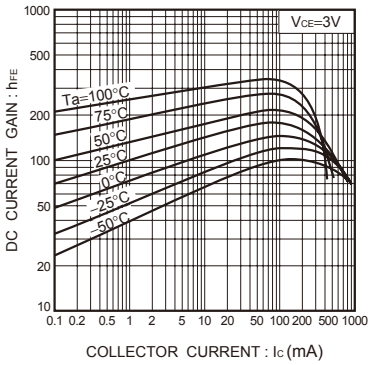


Fig.5 DC current gain vs. collector current

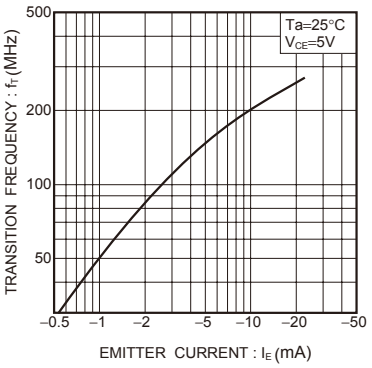


Fig. 6 Gain bandwidth product vs. emitter current

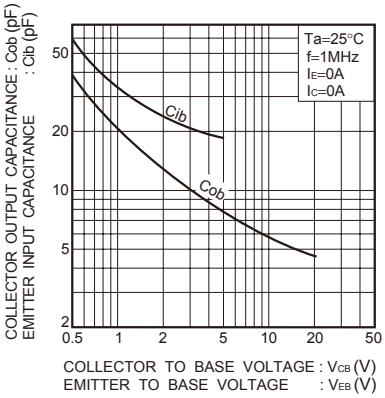


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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