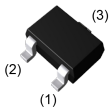
2SC4097

Medium Power Transistor (32V, 500mA) Datasheet

Parameter	Value
V_{CEO}	32V
I_C	500mA

●Outline

UMT3

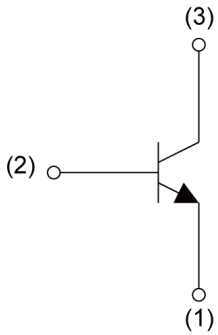


SOT-323
SC-70

●Features

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

●Inner circuit



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

●Application

DRIVING CIRCUIT,LOW FREQUENCY AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SC4097	UMT3	2021	T106	180	8	3000	C

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●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	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	500	mA
Power dissipation	P_D*1	200	mW
Junction temperature	T_j	150	℃
Range of storage temperature	T_{stg}	-55 to +150	℃

●Electrical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA	40	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA	32	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA	5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = 20V	-	-	1.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 4V	-	-	1.0	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	-	-	600	mV
DC current gain	h_{FE}	V_{CE} = 3V, I_C = 10mA	120	-	390	-
Transition frequency	f_T	V_{CE} = 5V, I_E = -20mA, f = 100MHz	-	250	-	MHz
Output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0A, f = 1MHz	-	6.5	-	pF

hFE values are calssified as follows :

rank	Q	R	-	-	-
h_{FE}	120-270	180-390	-	-	-

*1 Each terminal mounted on a reference land.

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●Electrical characteristic curves(T_a = 25°C)

Fig.1 Grounded emitter propagation characteristics

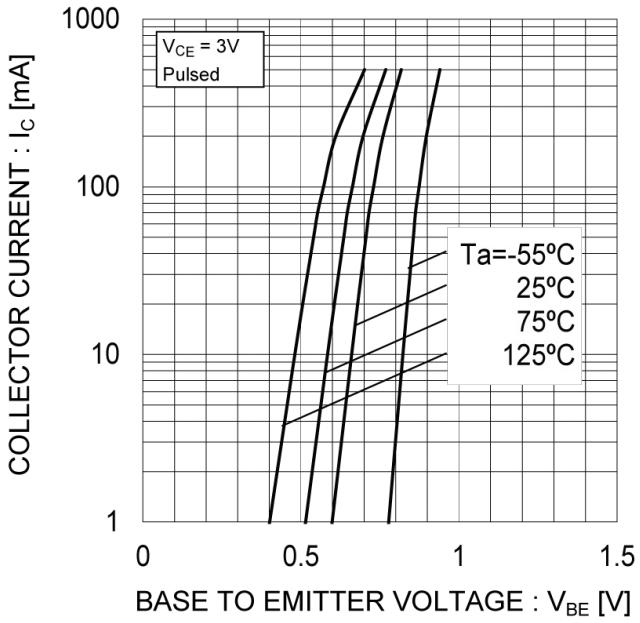


Fig.2 Typical output characteristics

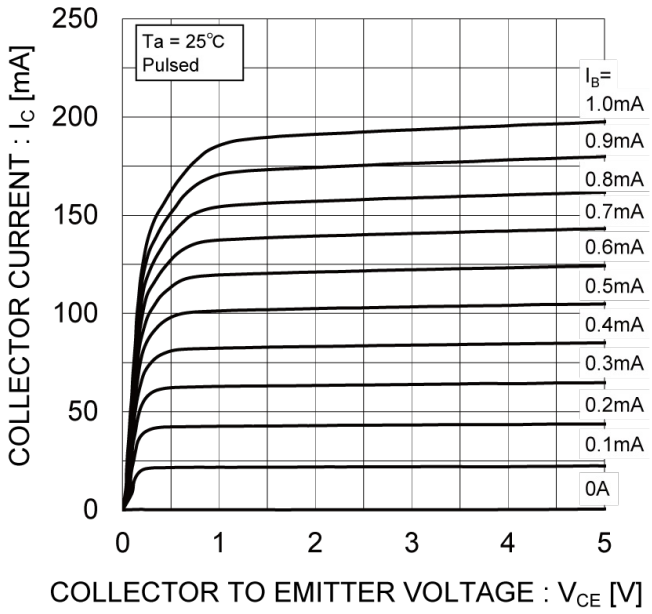


Fig.3 DC current gain vs.collector current(I)

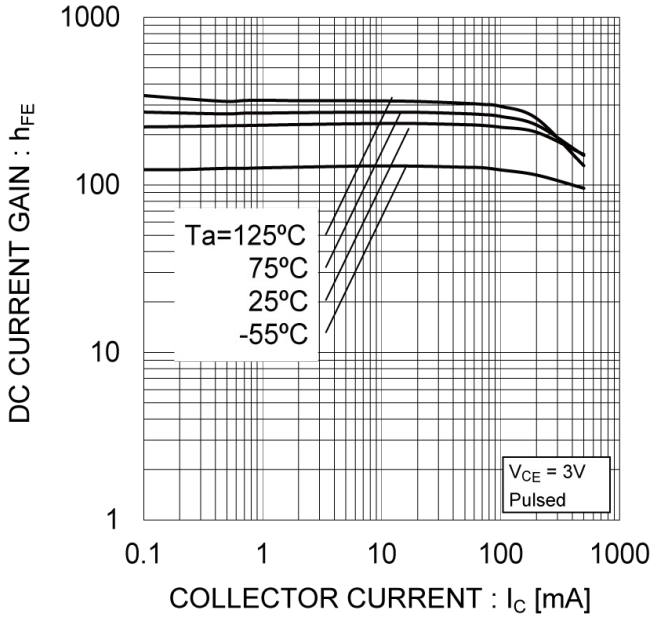
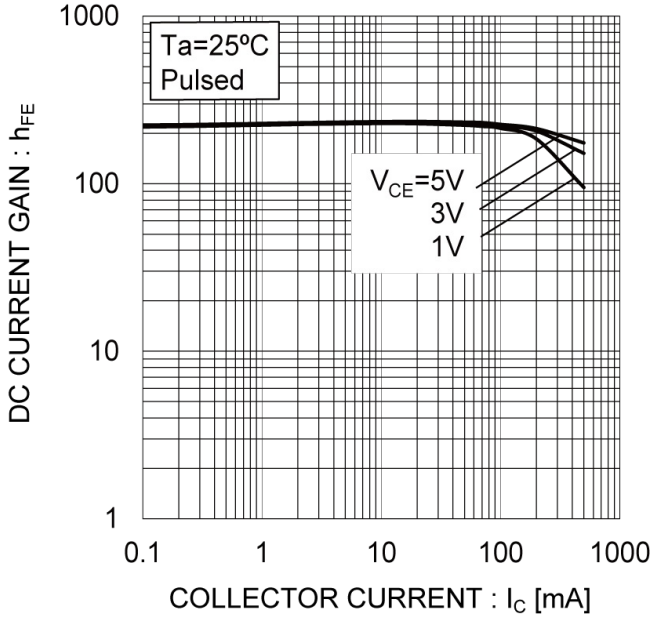


Fig.4 DC current gain vs.collector current(II)



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●Electrical characteristic curves(T_a = 25°C)

Fig.5 Collector-emitter saturation voltage vs. collector current(I)

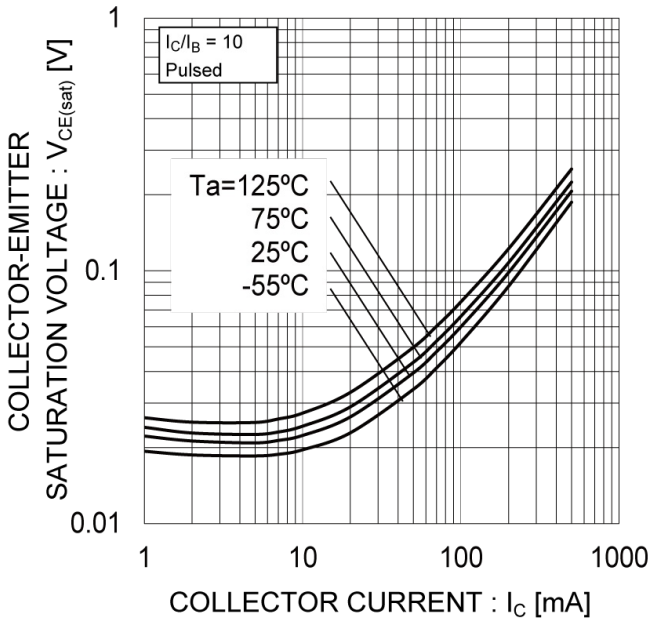


Fig.6 Collector-emitter saturation voltage vs. collector current(II)

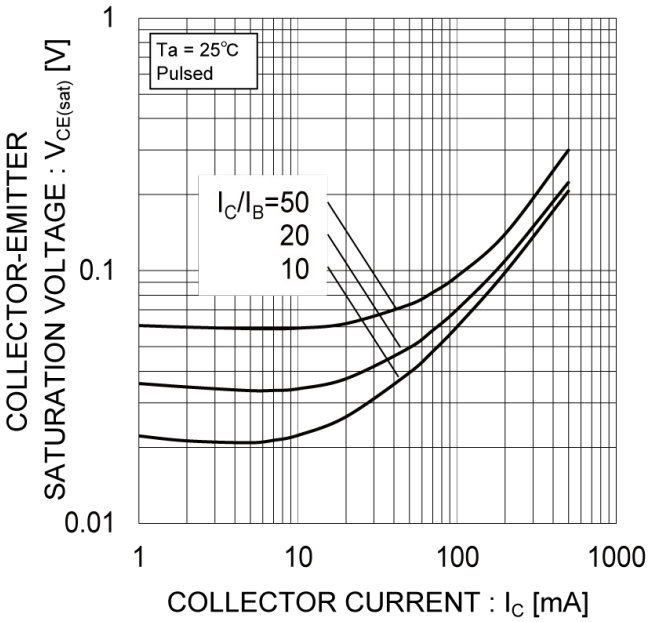


Fig.7 Base-emitter saturation voltage vs. collector current

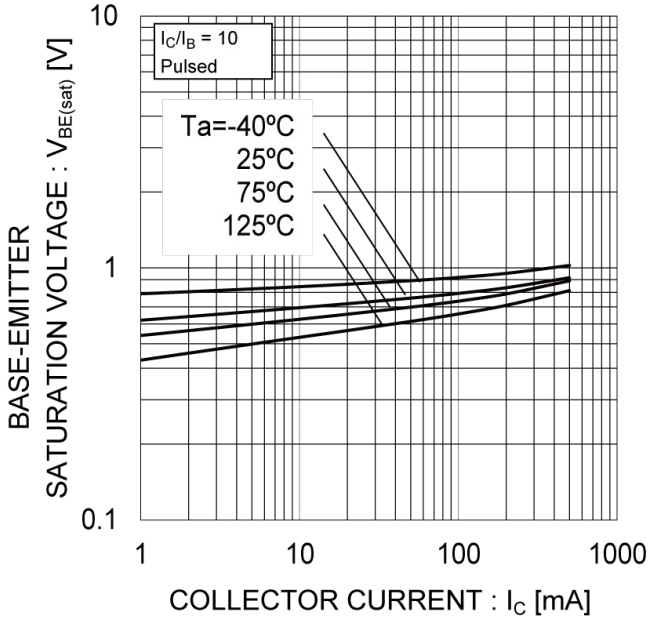
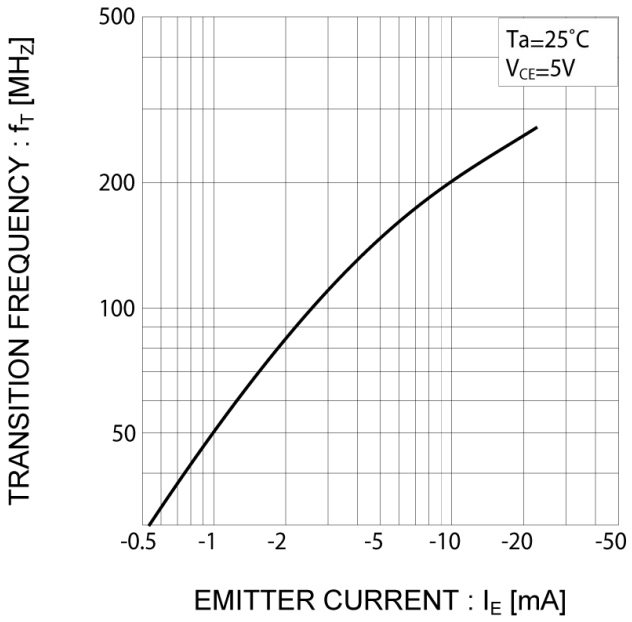


Fig.8 Gain bandwidth product vs. emitter current



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●Electrical characteristic curves(T_a = 25°C)

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

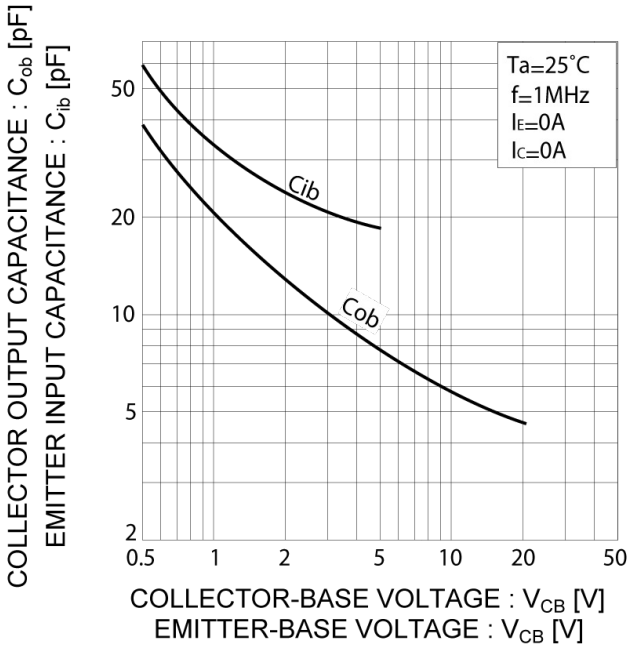
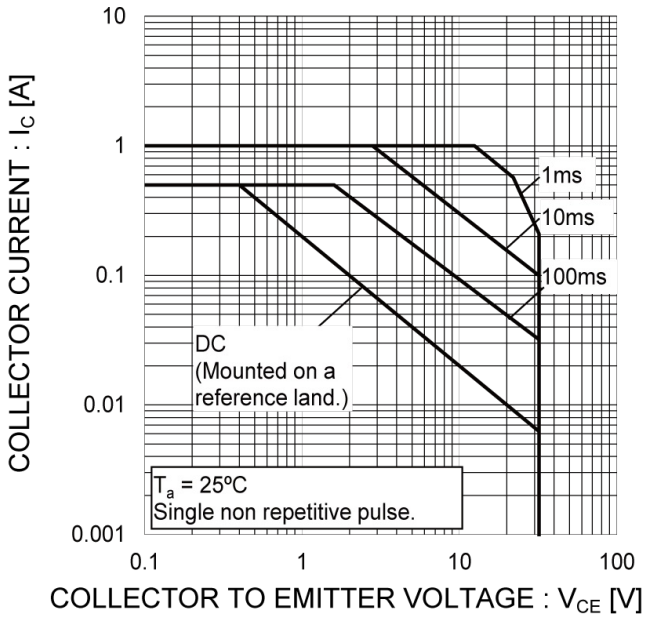


Fig.10 Safe Operating Area

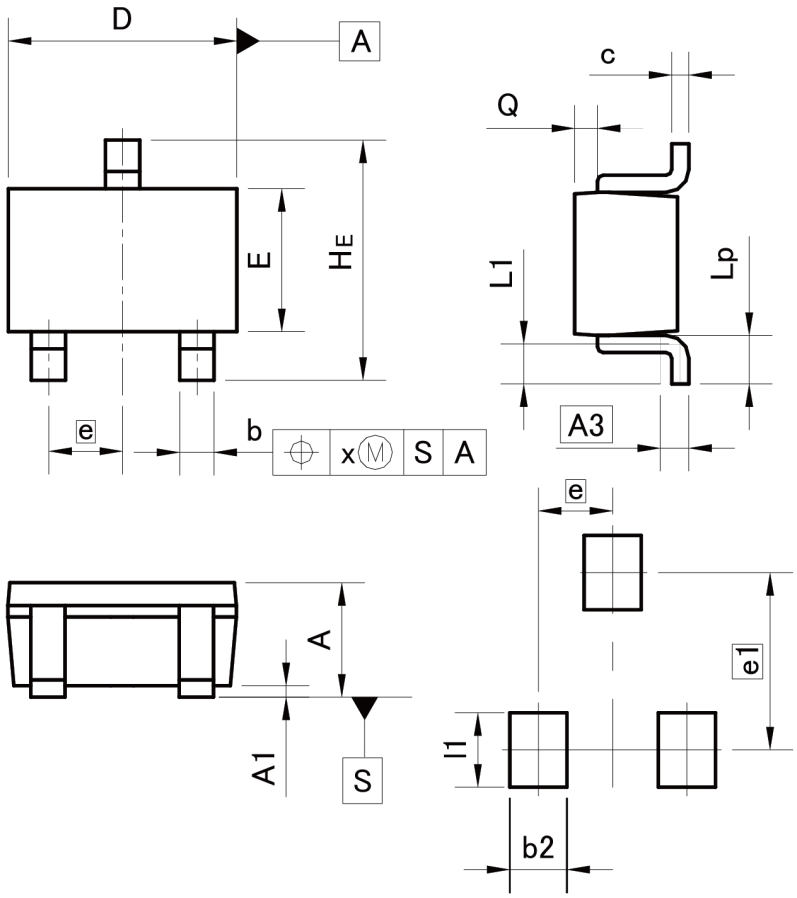


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●Dimensions

UMT3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30	0.004	0.012
x	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	–	0.50	–	0.020
e1	1.55		0.061	
l1	–	0.65	–	0.026

Dimension in mm/inches

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Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM.

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7) The Products specified in this document are not designed to be radiation tolerant.

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Distribution Inventory

Part Number	2sc4097
Package	UMT3
Unit Quantity	3000
Minimum Package Quantity	3000
Packing Type	Taping
Constitution Materials List	inquiry
RoHS	Yes

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