2SB1730

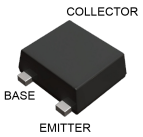
General purpose amplification (-12V, -2A)

Datasheet

Parameter	Value
V_{CEO}	-12V
I_C	-2A

●Outline

TUMT3

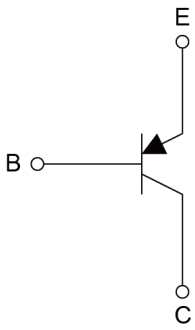


2SB1730

●Features

1) Collector current is large.
2) Collector saturation voltage is low.
   $V_{CE(sat)} \leqq$ -180mV
   at I_C= -1A / I_B= -50mA
3) Lead Free/RoHS Compliant.

●Inner circuit



●Application

Low frequency amplifier, Driver

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SB1730	TUMT3	2021	TL	180	8	3000	FV

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	-15	V
Collector-emitter voltage	V_{CEO}	-12	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-2	A
	I_{CP}*1	-4	A
Power dissipation	P_D	400	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 = -10μA	-15	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -1mA	-12	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = -10μA	-6	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = -15V	-	-	-100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = -6V	-	-	-100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -1A, I_B = -50mA	-	-120	-180	mV
DC current gain	h_{FE}	V_{CE} = -2V, I_C = -200mA	270	-	680	-
Transition frequency	f_T	V_{CE} = -2V, I_E = 200mA, f = 100MHz	-	360	-	MHz
Output capacitance	C_{ob}	V_{CB} = -10V, I_E = 0A, f = 1MHz	-	15	-	pF

*1 Pw=1ms Single Pulse

*2 Pulsed

●Electrical characteristic curves(T_a = 25°C)

Fig.1 Grounded Emitter Propagation Characteristics

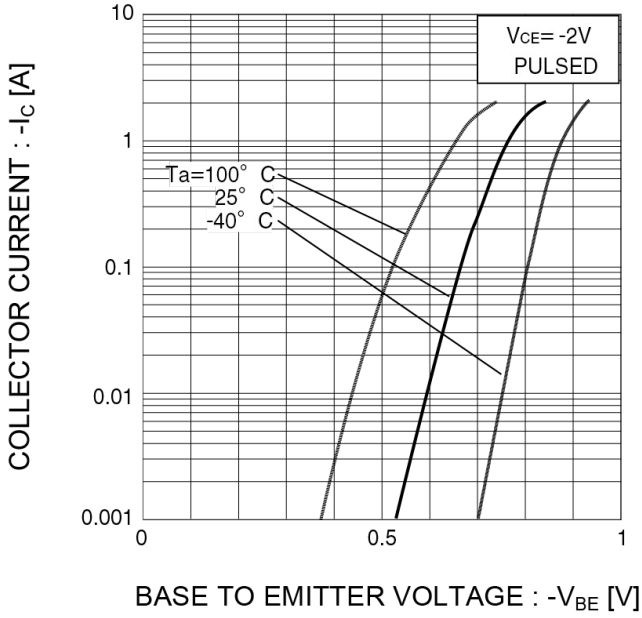


Fig.2 DC Current Gain vs. Collector Current

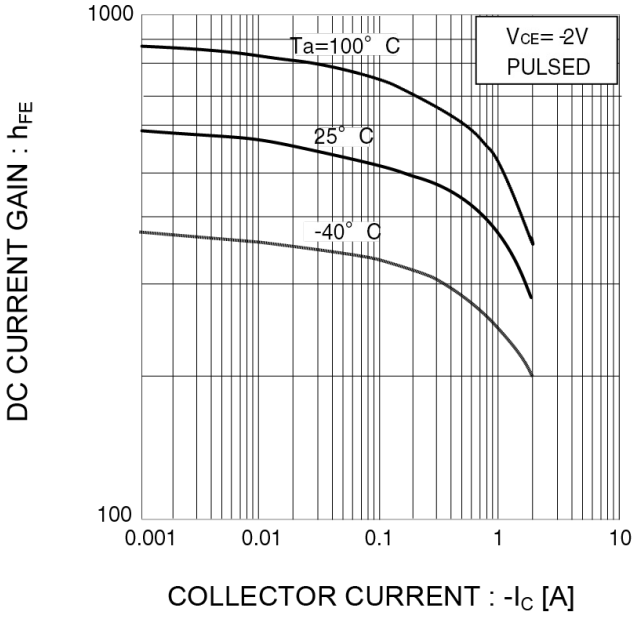


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current

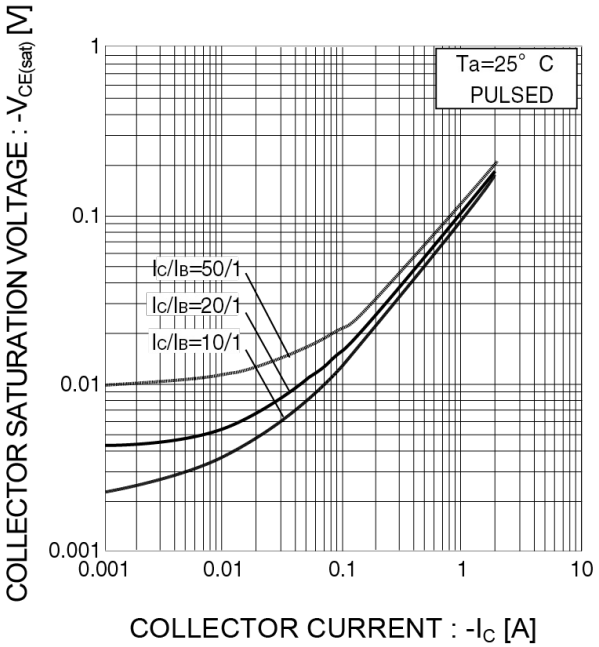
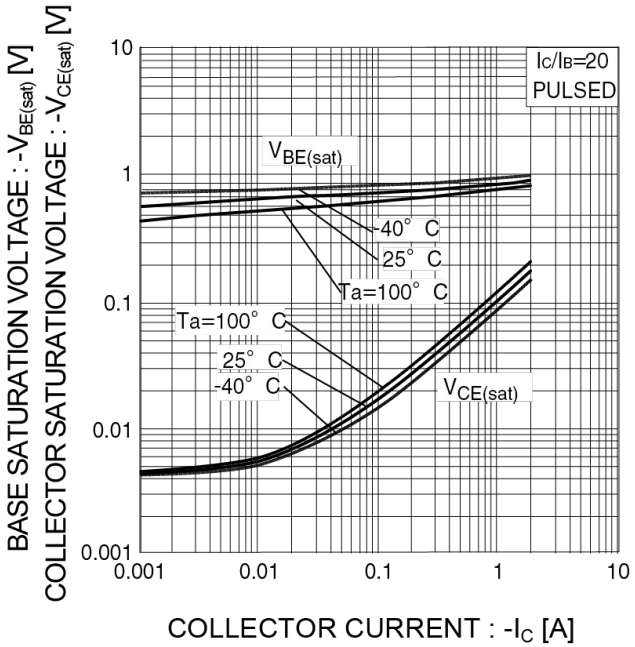


Fig.4 $V_{CE(sat)}$,$V_{BE(sat)}$ vs. collector current



●Electrical characteristic curves(T_a = 25°C)

Fig.5 Swithcing time

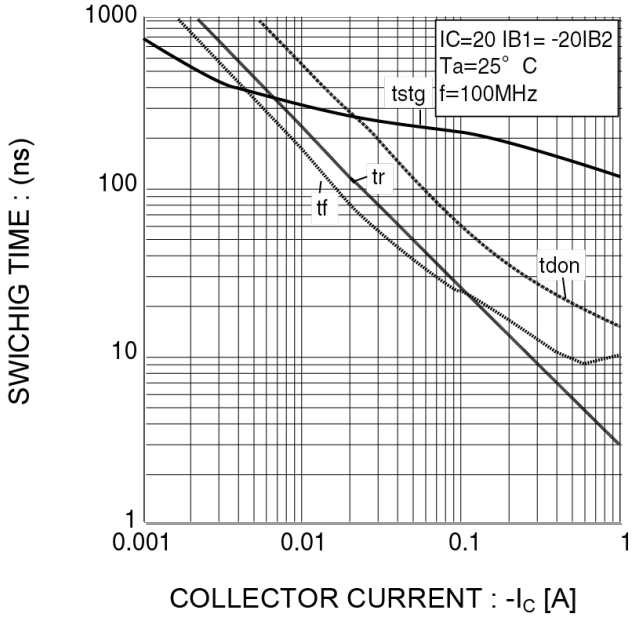


Fig.6 Gain Bandwidth Product vs. Emitter Current

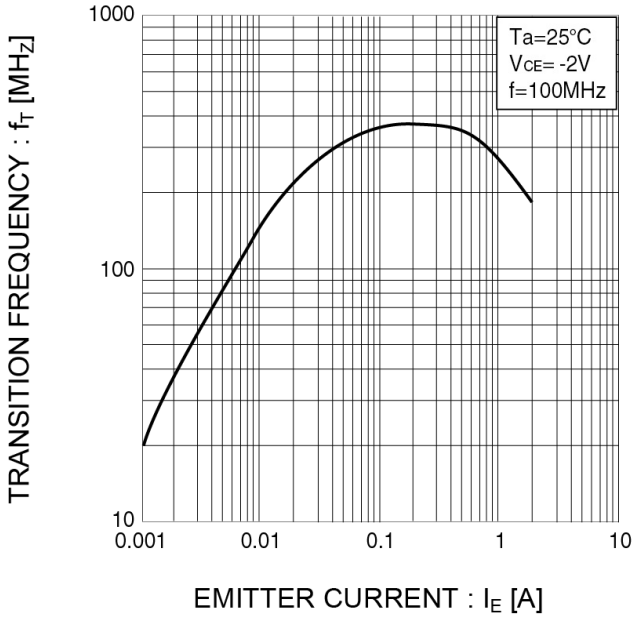
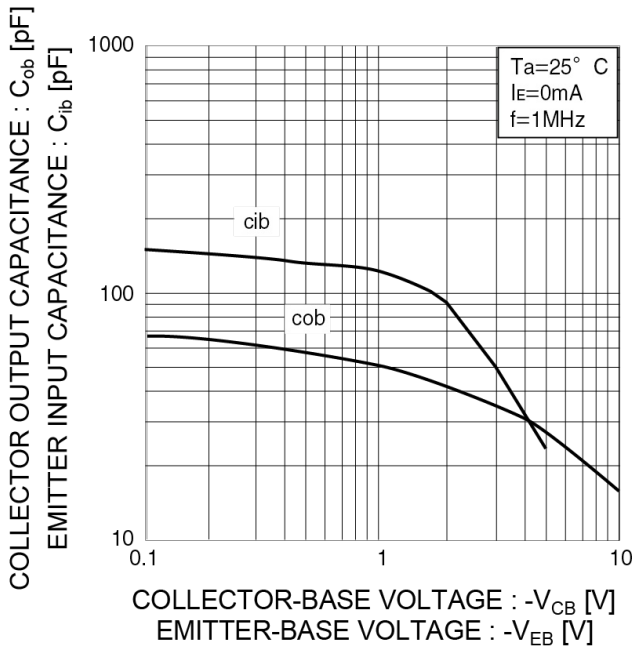


Fig.7 Cob vs. collector-base voltage, Cib vs. emitter-base voltage



●Dimensions

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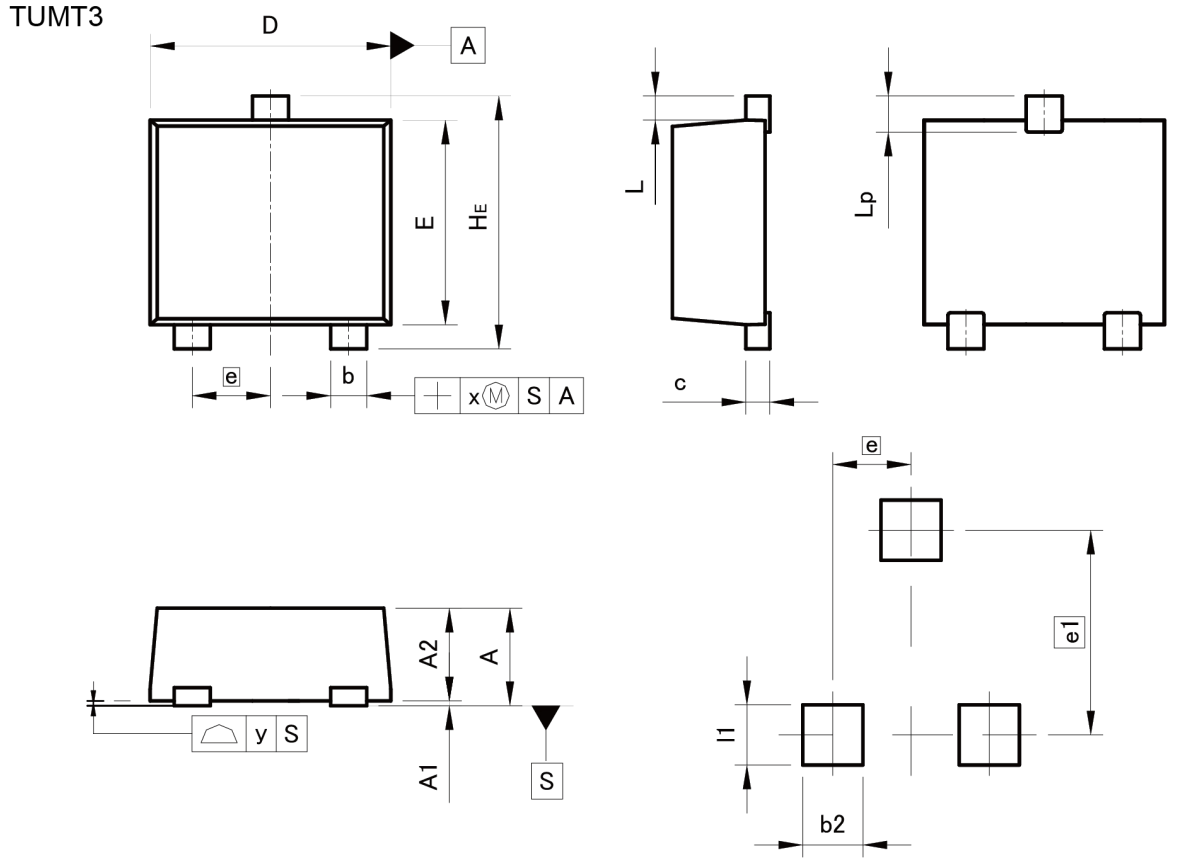

Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	−	0.85	−	0.033
A1	0.00	0.10	0.000	0.004
A2	0.72	0.82	0.028	0.032
b	0.25	0.40	0.010	0.016
c	0.12	0.22	0.005	0.009
D	1.90	2.10	0.075	0.083
E	1.60	1.80	0.063	0.071
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L	0.20		0.008	
Lp	−	0.40	−	0.016
x	−	0.10	−	0.004
y	−	0.10	−	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	−	0.50	−	0.020
e1	1.70		0.067	
l1	−	0.50	−	0.020

Dimension in mm/inches

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