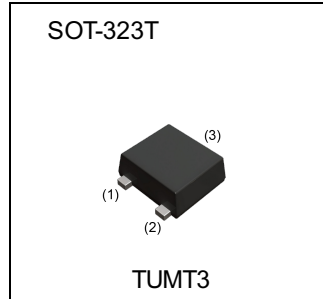


Parameter	Value
$V_{CEO}$	30V
$I_C$	1A

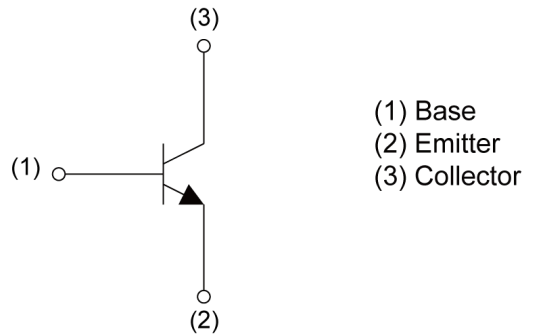
●Outline



●Features

- 1)A collector current is large.
- 2)Collector-Emitter saturation voltage is low.  
 $V_{CE(sat)} \leq 350mV$   
 at  $I_C=500mA/I_B=25mA$

●Inner circuit



●Application

LOW FREQUENCY AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SD2703	SOT-323T (TUMT3)	2021	TL	180	8	3000	EU

● **Absolute maximum ratings** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Values	Unit
Collector-base voltage	$V_{\text{CBO}}$	30	V
Collector-emitter voltage	$V_{\text{CEO}}$	30	V
Emitter-base voltage	$V_{\text{EBO}}$	6	V
Collector current	$I_{\text{C}}$	1	A
	$I_{\text{CP}}^{*1}$	2	A
Power dissipation	$P_{\text{D}}^{*2}$	400	mW
	$P_{\text{D}}^{*3}$	800	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Range of storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

● **Electrical characteristics** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	$BV_{\text{CBO}}$	$I_{\text{C}} = 10\mu\text{A}$	30	-	-	V
Collector-emitter breakdown voltage	$BV_{\text{CEO}}$	$I_{\text{C}} = 1\text{mA}$	30	-	-	V
Emitter-base breakdown voltage	$BV_{\text{EBO}}$	$I_{\text{E}} = 10\mu\text{A}$	6	-	-	V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}} = 30\text{V}$	-	-	100	nA
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}} = 6\text{V}$	-	-	100	nA
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 500\text{mA}$ , $I_{\text{B}} = 25\text{mA}$	-	120	350	mV
DC current gain	$h_{\text{FE}}$	$V_{\text{CE}} = 2\text{V}$ , $I_{\text{C}} = 100\text{mA}$	270	-	680	-
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 2\text{V}$ , $I_{\text{E}} = -100\text{mA}$ , $f = 100\text{MHz}$	-	320	-	MHz
Output capacitance	$C_{\text{ob}}$	$V_{\text{CB}} = 10\text{V}$ , $I_{\text{E}} = 0\text{A}$ , $f = 1\text{MHz}$	-	7	-	pF

\*1  $P_w=1\text{ms}$ , Single pulse

\*2 Each terminal mounted on a reference land.

\*3 Mounted on a ceramic board(25×25×0.8mm ).

●Electrical characteristic curves( $T_a = 25^\circ\text{C}$ )

Fig.1 Grounded emitter propagation characteristics

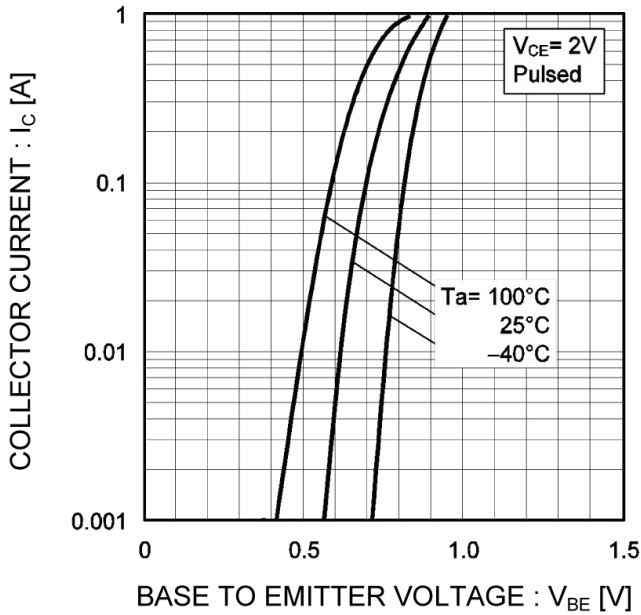


Fig.2 Typical output characteristics

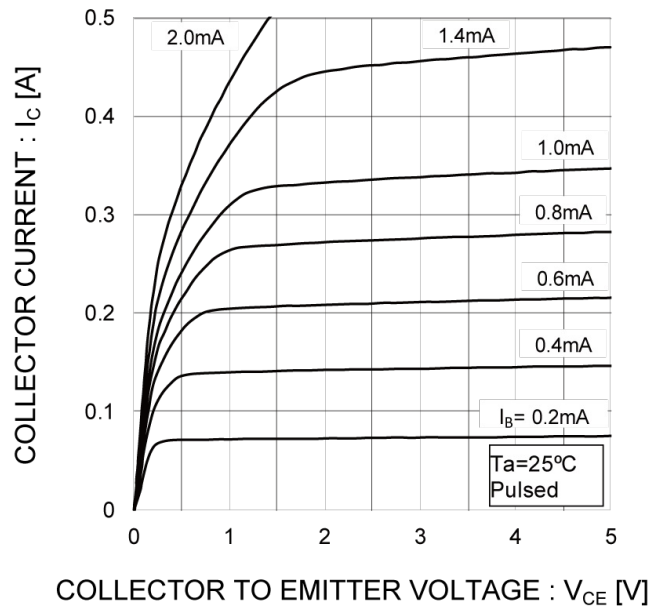


Fig.3 DC current gain vs. collector current (I)

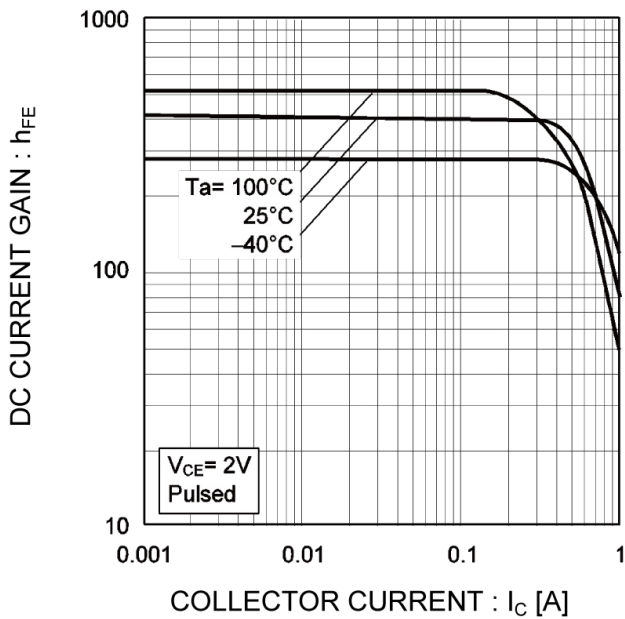
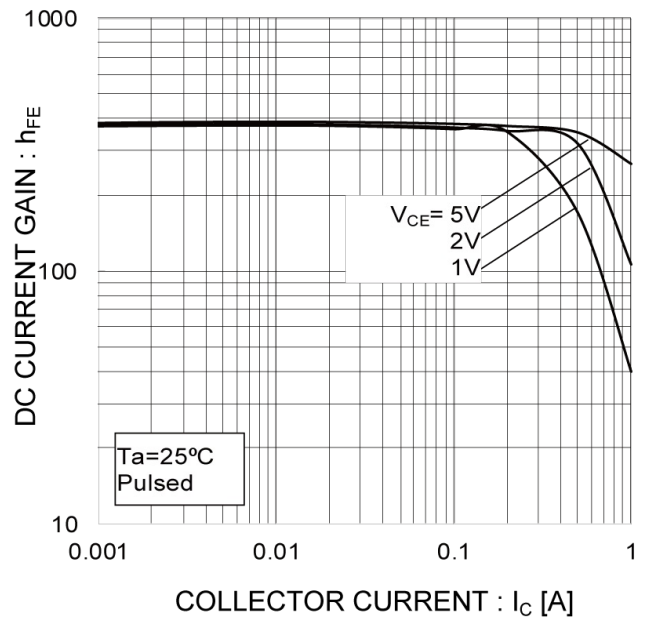


Fig.4 DC current gain vs. collector current (II)



● Electrical characteristic curves ( $T_a = 25^\circ\text{C}$ )

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

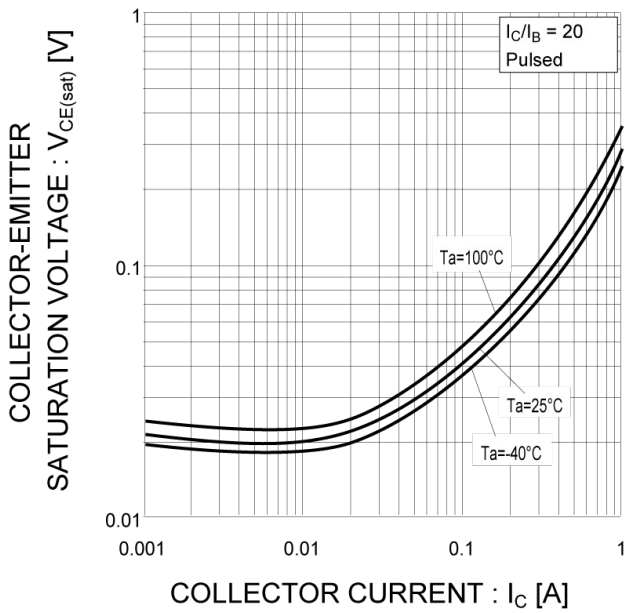


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

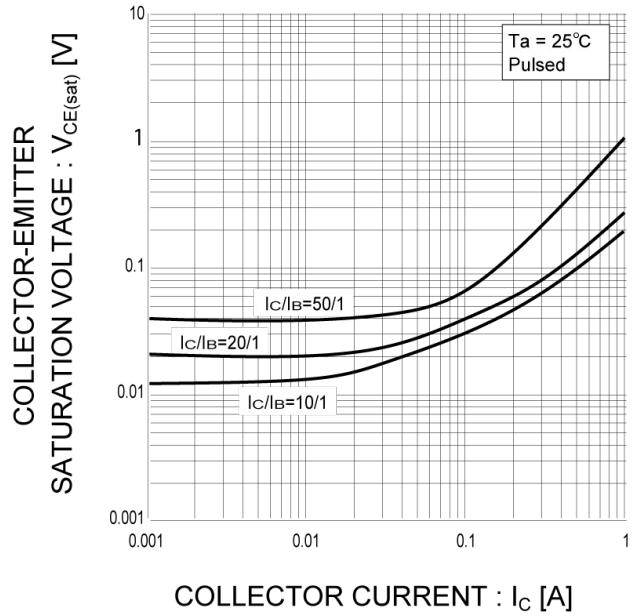


Fig.7 Base-emitter saturation voltage vs. collector current

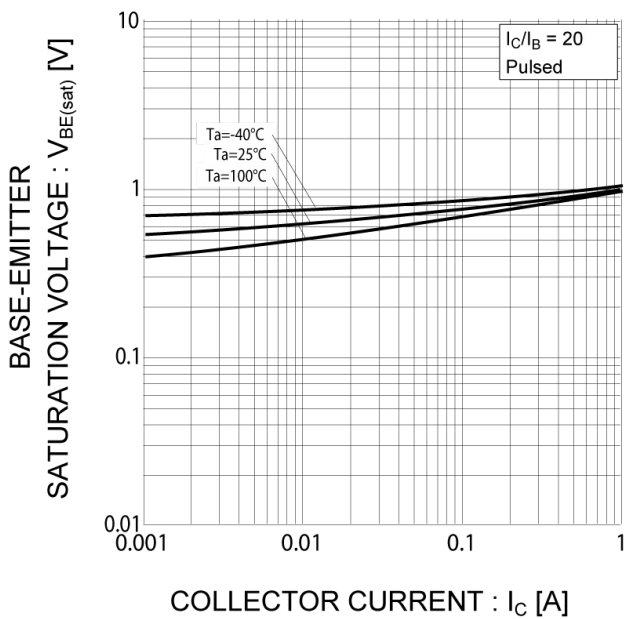
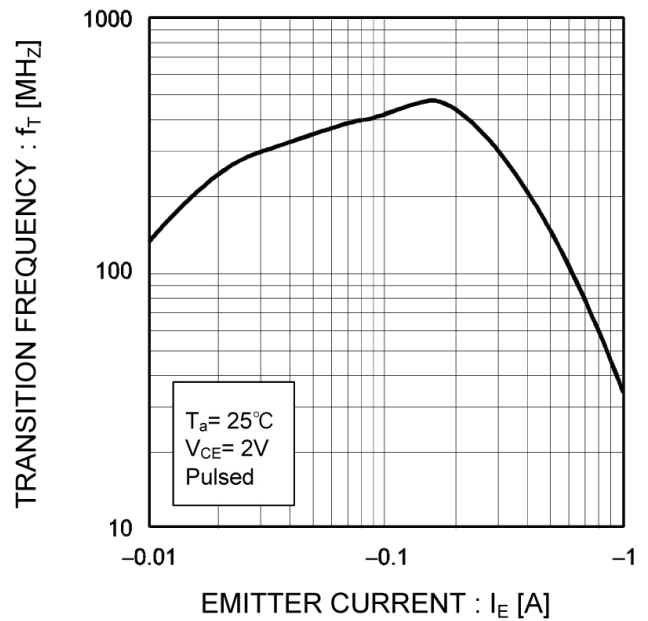


Fig.8 Gain bandwidth product vs. emitter current



● Electrical characteristic curves ( $T_a = 25^\circ\text{C}$ )

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

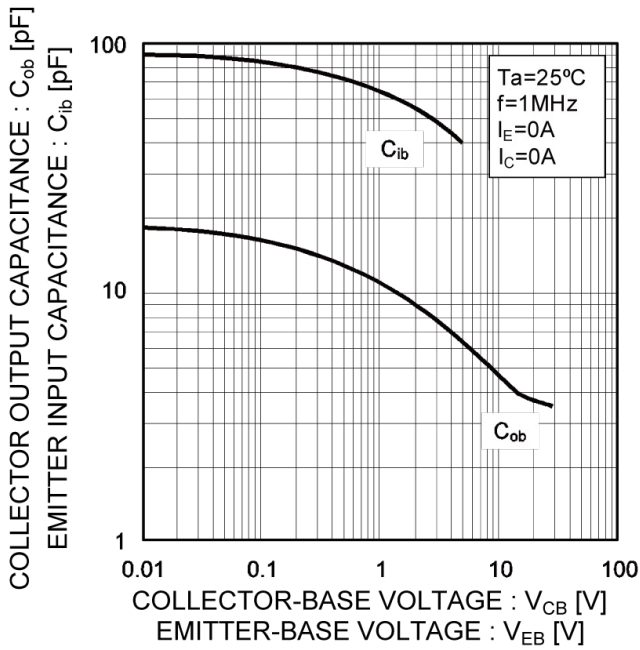
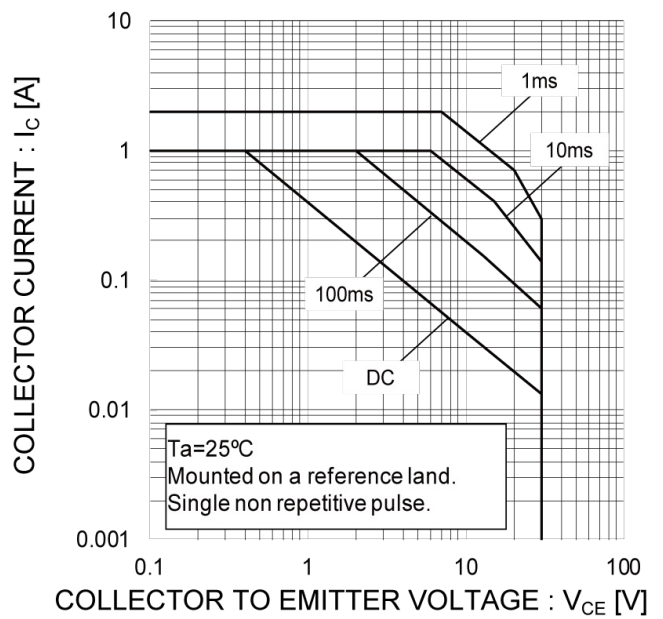
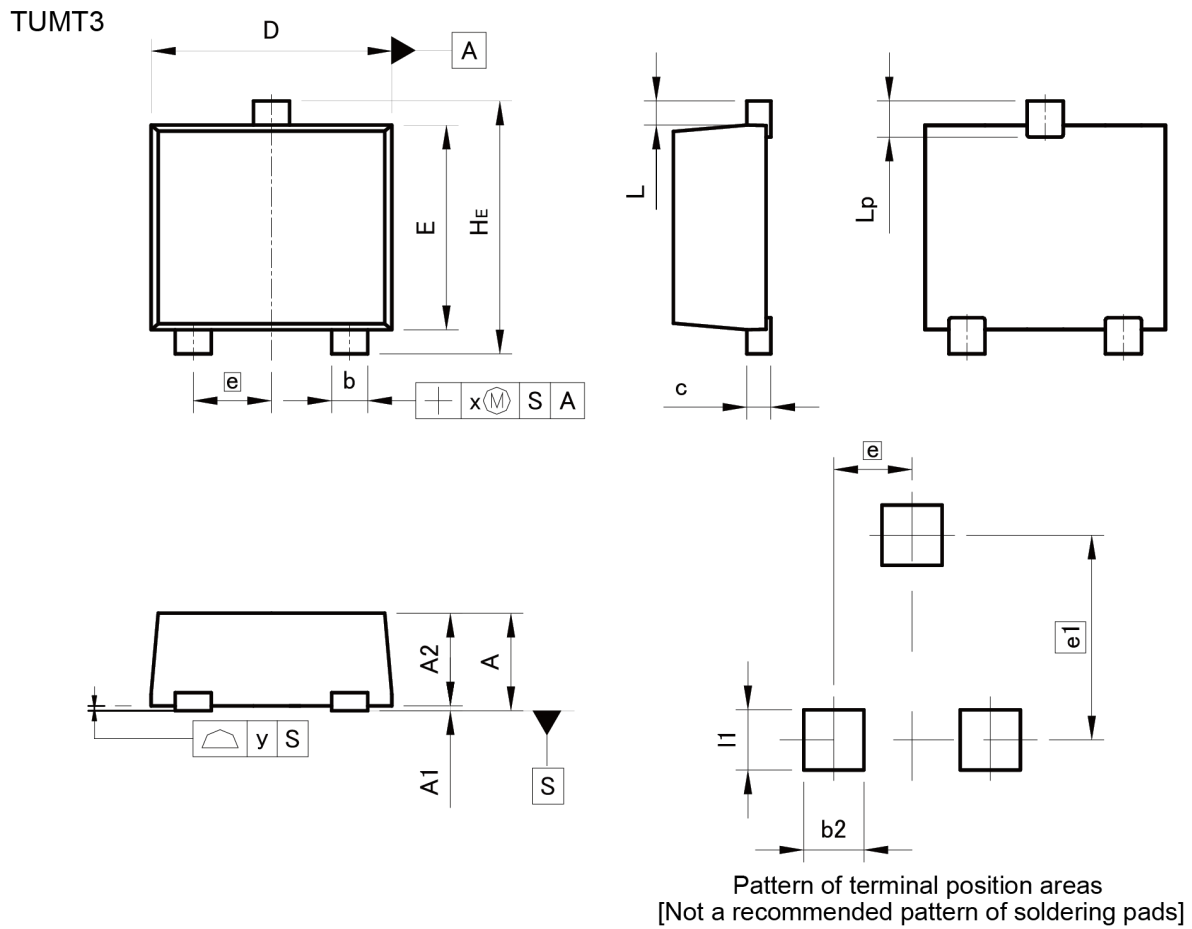


Fig.10 Safe operating area (I)



●Dimensions



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	
I1	-	0.50	-	0.020

Dimension in mm/inches

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