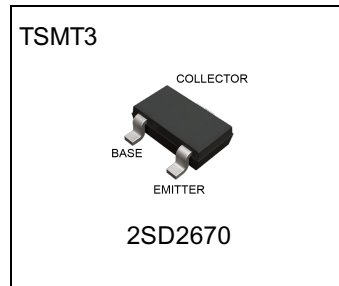


Parameter	Value
$V_{CEO}$	12V
$I_C$	3A

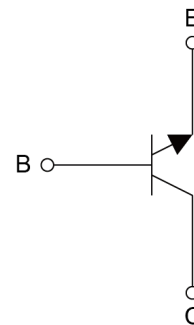
●Outline



●Features

- 1) Collector current is large.
- 2)  $V_{CE(sat)} \leq 250mV$   
at  $I_C = 1.5A / I_B = 30mA$
- 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
2SD2670	TSMT3	2928	TL	180	8	3000	XX

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

Parameter	Symbol	Values	Unit
Collector-base voltage	$V_{\text{CBO}}$	15	V
Collector-emitter voltage	$V_{\text{CEO}}$	12	V
Emitter-base voltage	$V_{\text{EBO}}$	6	V
Collector current	$I_{\text{C}}$	3	A
	$I_{\text{CP}}^{*1}$	6	A
Power dissipation	$P_{\text{D}}$	500	mW
	$P_{\text{D}}^{*2}$	1	W
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	$BV_{\text{CBO}}$	$I_{\text{C}} = 10\mu\text{A}$	15	-	-	V
Collector-emitter breakdown voltage	$BV_{\text{CEO}}$	$I_{\text{C}} = 1\text{mA}$	12	-	-	V
Emitter-base breakdown voltage	$BV_{\text{EBO}}$	$I_{\text{E}} = 10\mu\text{A}$	6	-	-	V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}} = 15\text{V}$	-	-	100	nA
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}} = 6\text{V}$	-	-	100	nA
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 1.5\text{A}, I_{\text{B}} = 30\text{mA}$	-	120	250	mV
DC current gain	$h_{\text{FE}}$	$V_{\text{CE}} = 2\text{V}, I_{\text{C}} = 500\text{mA}$	270	-	680	-
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 2\text{V}, I_{\text{E}} = -500\text{mA}, f = 100\text{MHz}$	-	360	-	MHz
Output capacitance	$C_{\text{ob}}$	$V_{\text{CB}} = 10\text{V}, I_{\text{E}} = 0\text{A}, f = 1\text{MHz}$	-	30	-	pF

\*1  $P_w=1\text{ms}$  Single Pulse

\*2 Mounted on a ceramic board (25mm×25mm×0.8mm)

\*3 Pulsed

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

Fig.1 Grounded Emitter Propagation Characteristics

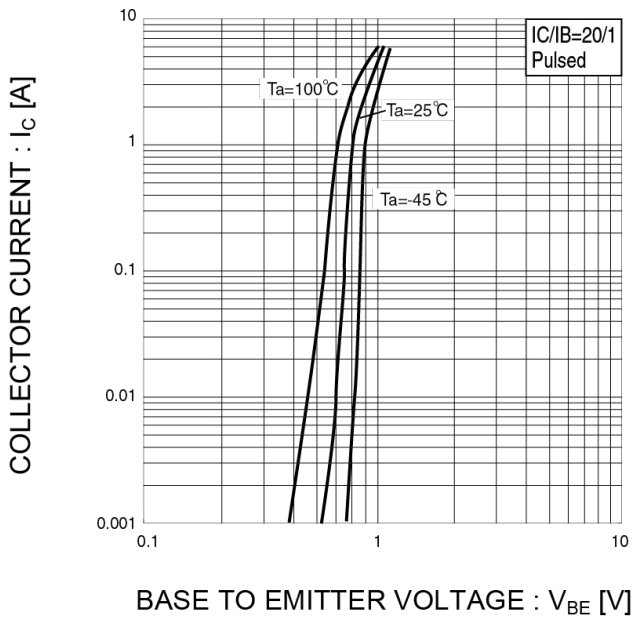


Fig.2 DC Current Gain vs. Collector Current

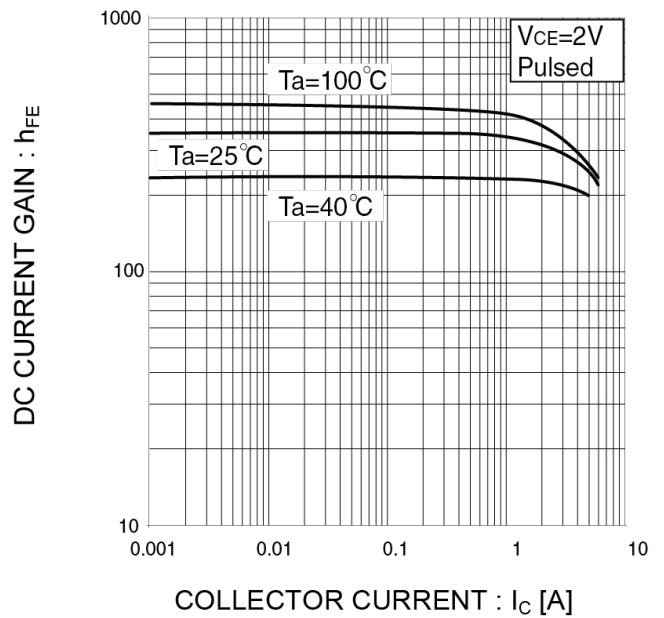


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current

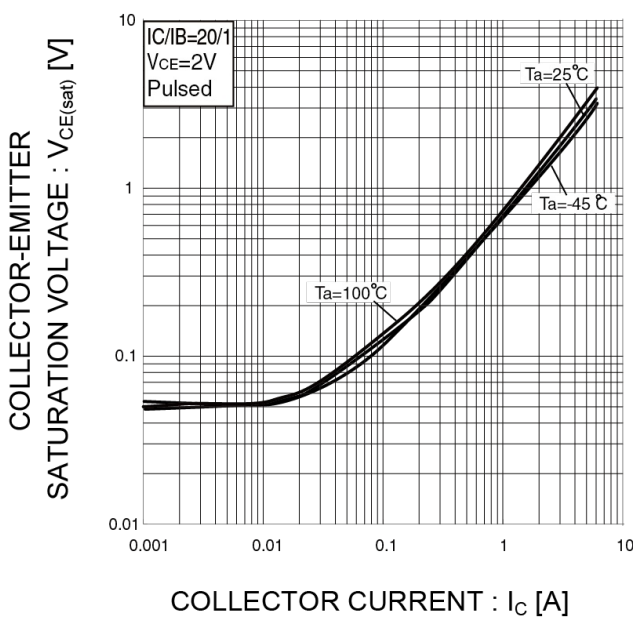
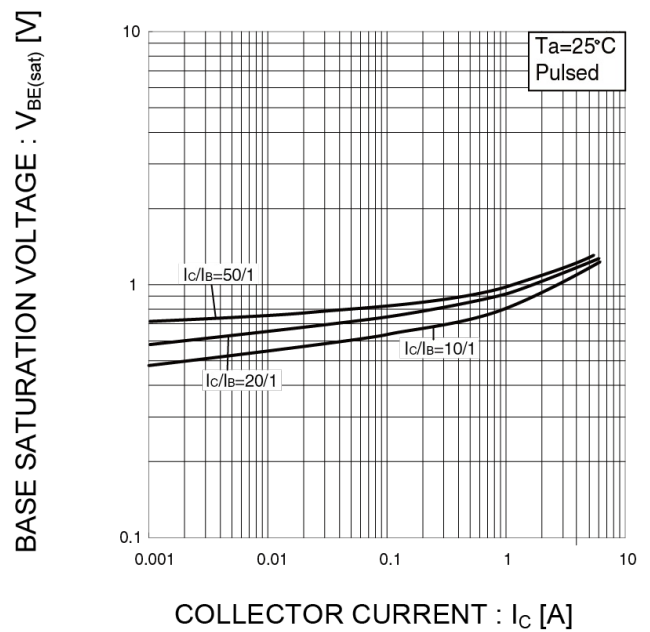


Fig.4 Base-emitter saturation voltage vs. collector current



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

Fig.5 Gain Bandwidth Product vs. Emitter Current

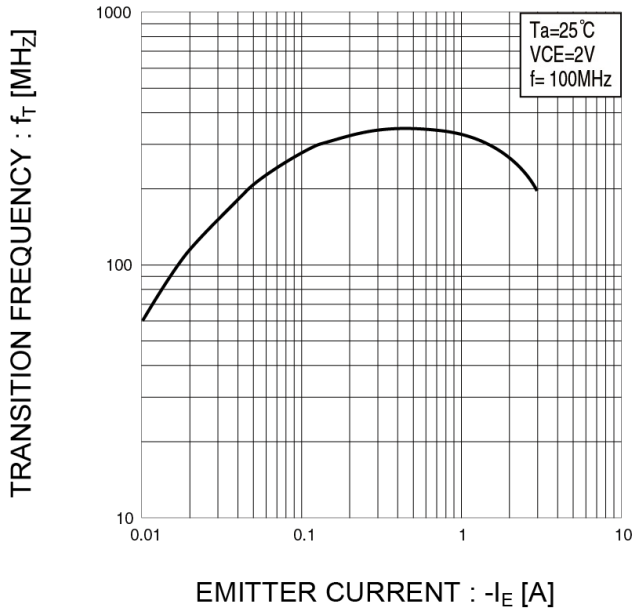
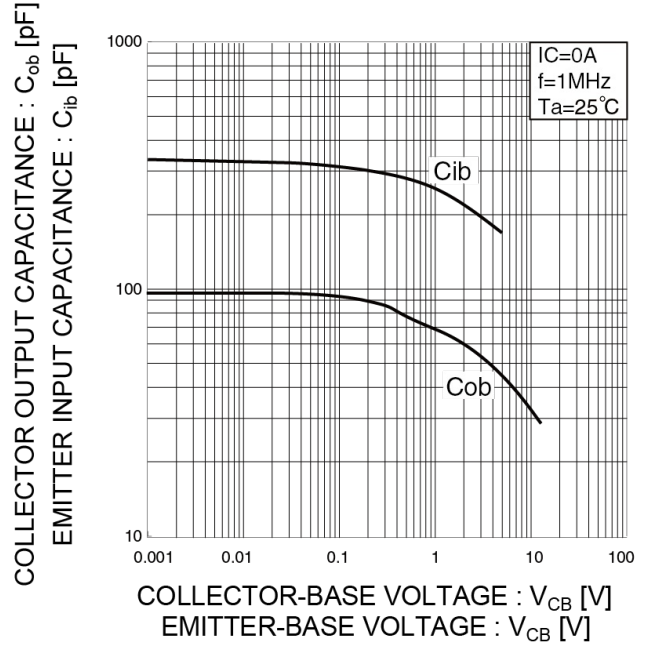
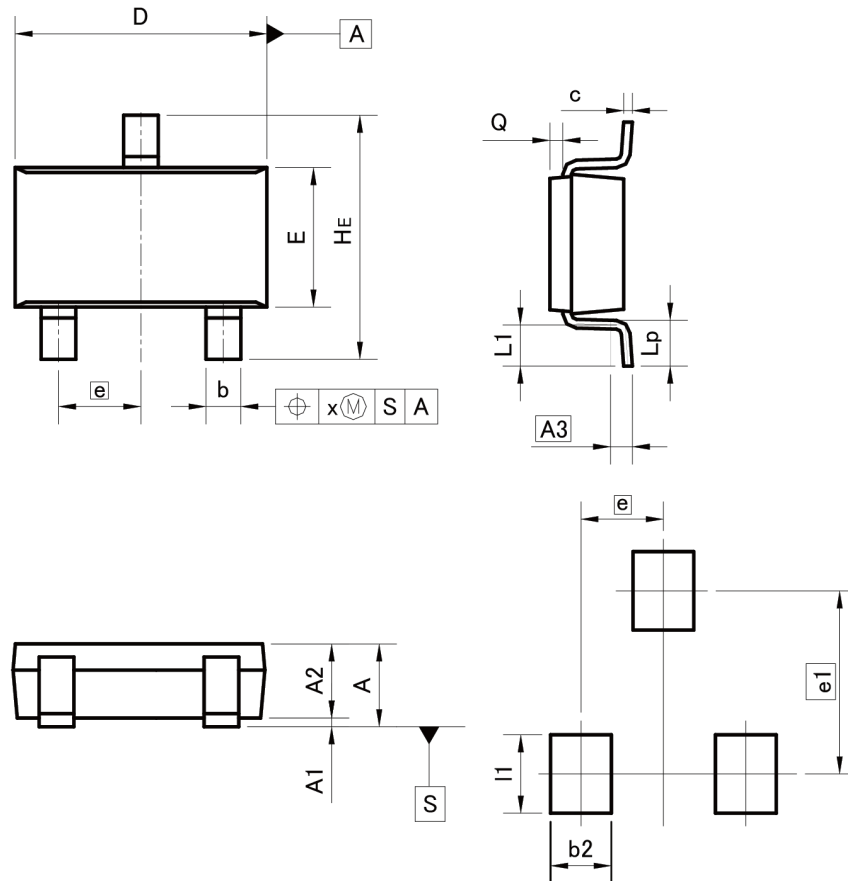


Fig.6  $C_{ob}$  vs. collector-base voltage,  $C_{ib}$  vs. emitter-base voltage



●Dimensions

TSMT3



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

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	1.00	-	0.039
A1	0.00	0.10	0.000	0.004
A2	0.75	0.95	0.030	0.037
A3	0.25		0.010	
b	0.35	0.50	0.014	0.020
c	0.10	0.26	0.004	0.010
D	2.80	3.00	0.110	0.118
E	1.50	1.80	0.059	0.071
e	0.95		0.037	
HE	2.60	3.00	0.102	0.118
L1	0.30	0.60	0.012	0.024
Lp	0.40	0.70	0.016	0.028
Q	0.05	0.25	0.002	0.010
x	-	0.20	-	0.008

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.70	-	0.028
e1	2.10		0.083	
l1	-	0.90	-	0.035

Dimension in mm/inches

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