2SD2653

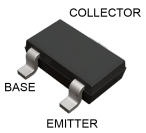
Low frequency amplifier

Datasheet

Parameter	Value
V_{CEO}	12V
I_C	2A

●Outline

TSMT3

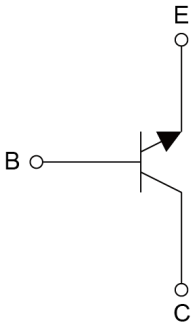


2SD2653

●Features

1) Collector current is large.
2) $V_{CE(sat)} \leqq$ 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
2SD2653	TSMT3	2928	TL	180	8	3000	FW

●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	500	mW
	P_D*2	1	W
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	-	90	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	-	20	-	pF

*1 Pw=1ms Single Pulse

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

*3 Pulsed

●Electrical characteristic curves(T_a = 25°C)

Fig.1 Grounded Emitter Propagation Characteristics

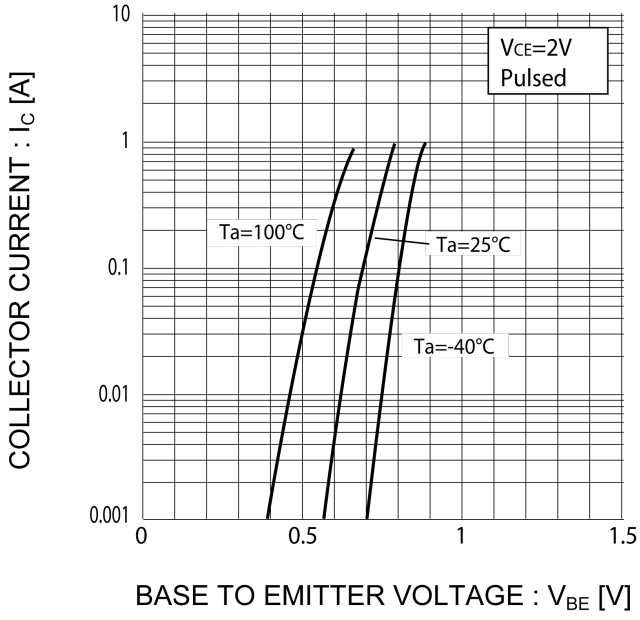


Fig.2 DC Current Gain vs. Collector Current

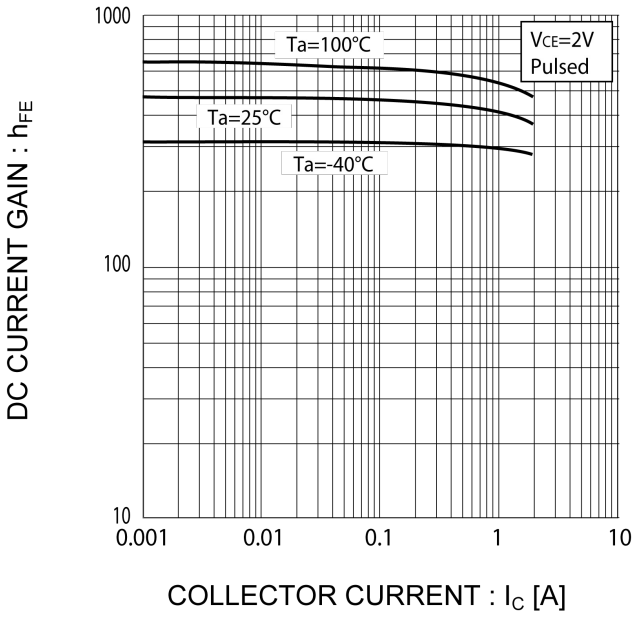


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current (I)

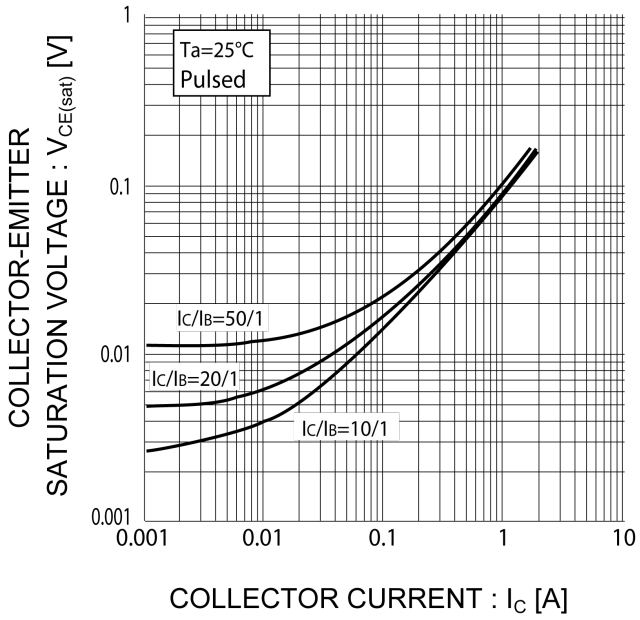
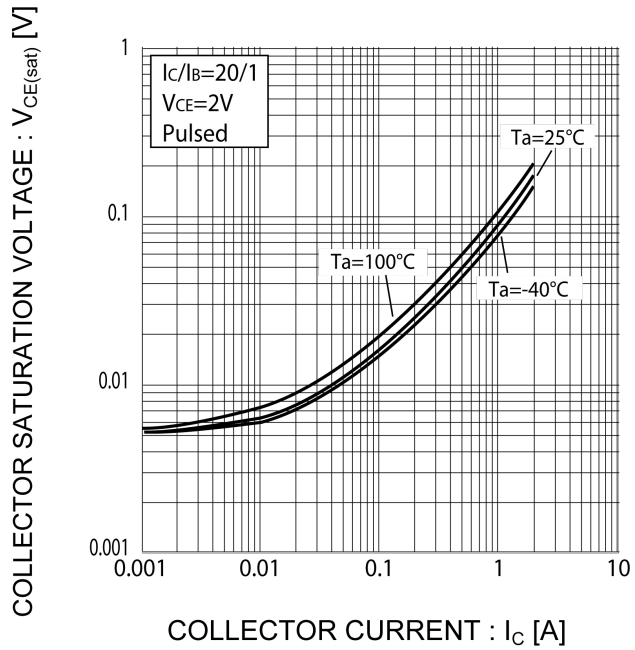


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (II)



●Electrical characteristic curves(T_a = 25°C)

Fig.5 Swithcing time

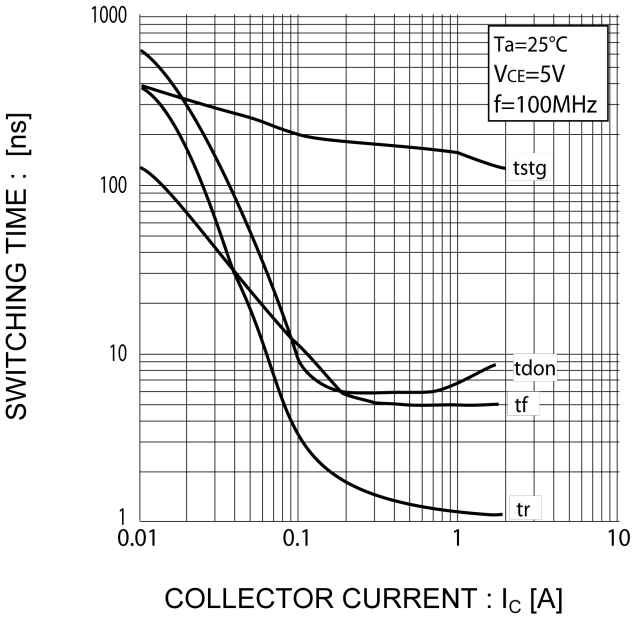


Fig.6 Gain Bandwidth Product vs. Emitter Current

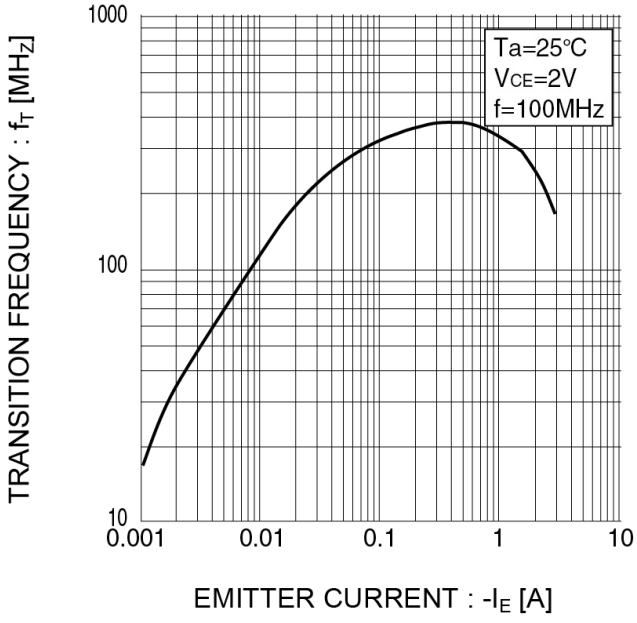
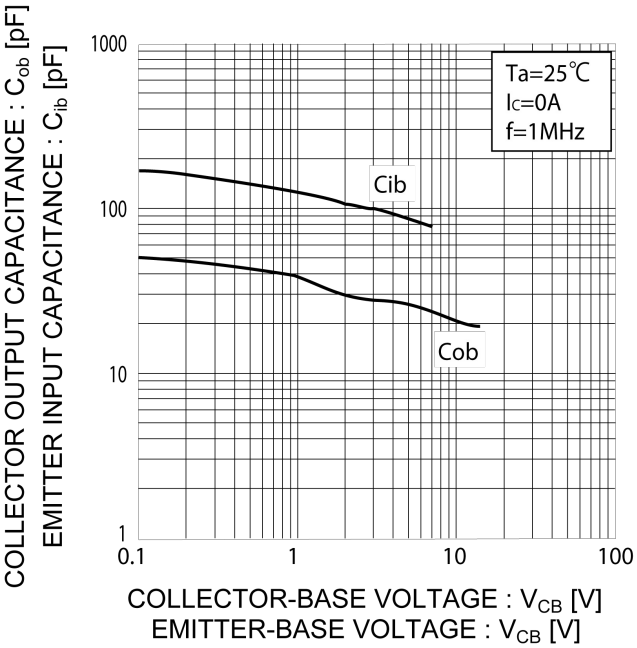
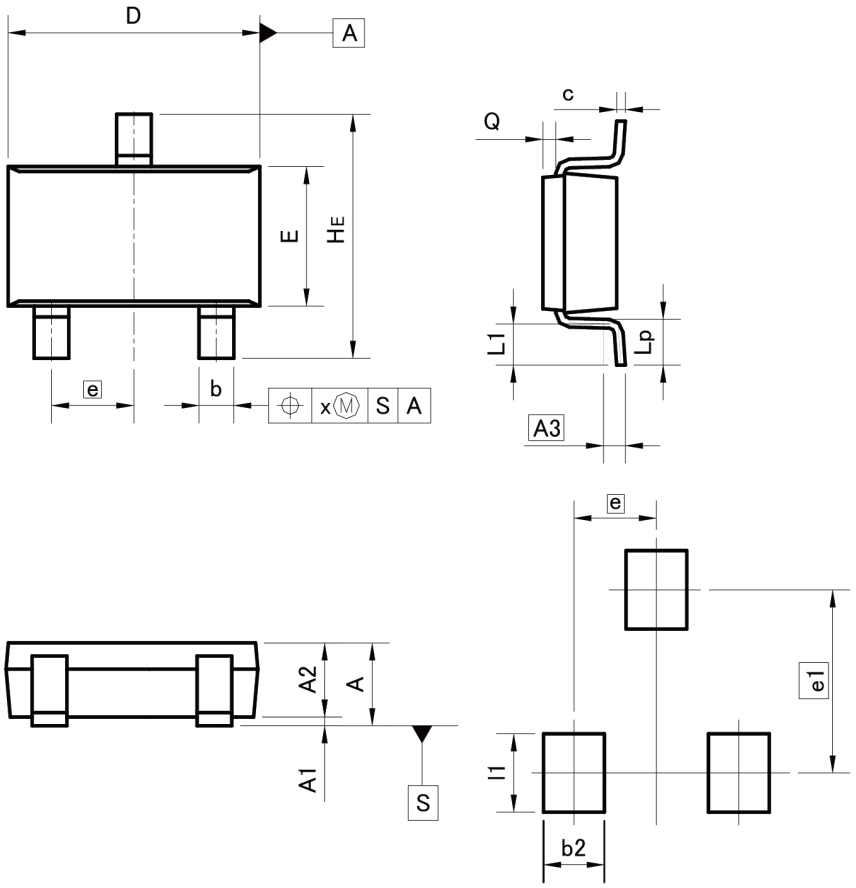


Fig.7 Cob vs. collector-base voltage, Cib vs. emitter-base voltage



●Dimensions

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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