2SD1733

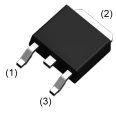
Power Transistor(80V,1A)

Datasheet

Parameter	Value
V_{CEO}	80V
I_C	1A

●Outline

CPT

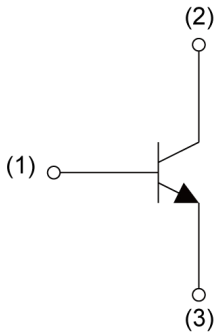


TO-252
SC-63

●Features

1)High V_{CEO},VCEO=80V
2)High I_C,I_C=1A(DC)
3)Good hFE linearity
4)Low $V_{CE(sat)}$
5)Complements the 2SB1181

●Inner circuit



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

●Application

Low frequency power amplifier

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SD1733	CPT	6595	TL	330	16	2500	D1733

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	1	A
Power dissipation	P_D*1	1	W
	P_D*2	10	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 = 50μA	120	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA	80	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 50μA	5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = 100V	-	-	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 = 20mA	-	-	400	mV
DC current gain	h_{FE}	V_{CE} = 3V, I_C = 500mA	82	-	390	-
Transition frequency	f_T	V_{CE} = 10V, I_E = -50mA, f = 100MHz	-	100	-	MHz
Output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0A, f = 1MHz	-	20	-	pF

hFE values are calssified as follows :

rank	P	Q	R	-	-
h_{FE}	82-180	120-270	180-390	-	-

*1 Ta=25℃

*2 Tc=25℃

●Electrical characteristic curves(T_a = 25°C)

Fig.1 Ground Emitter Propagation Characteristics

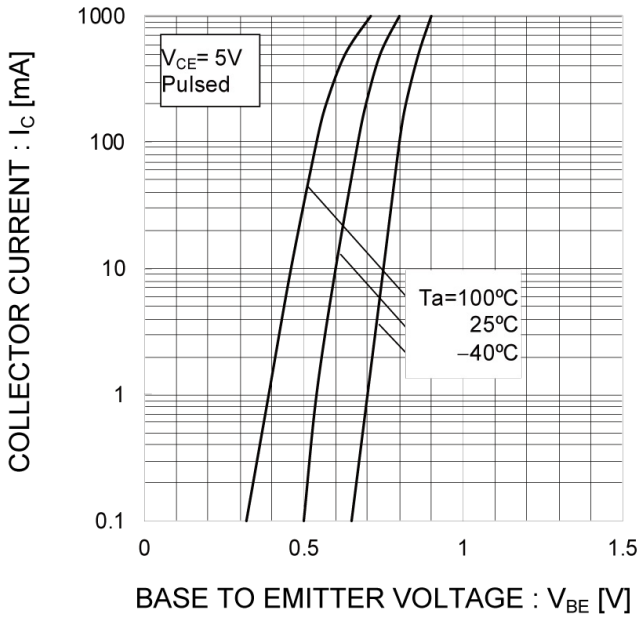


Fig.2 Typical Output Characteristics

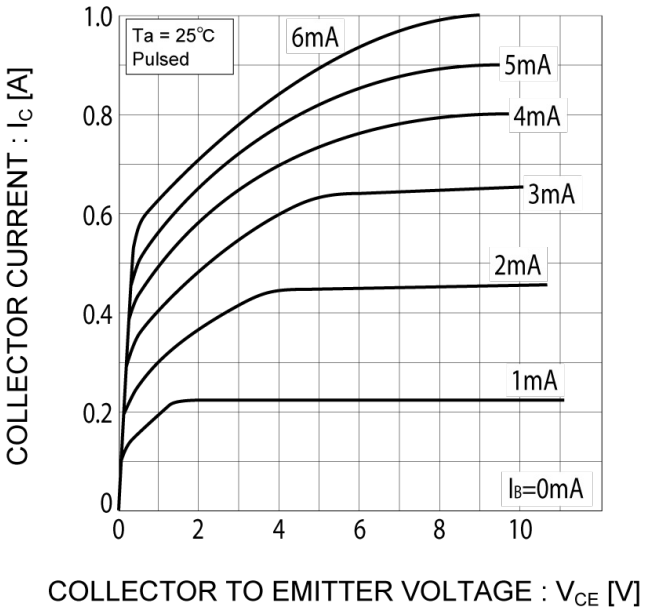


Fig.3 DC Current Gain vs. Collector Current (I)

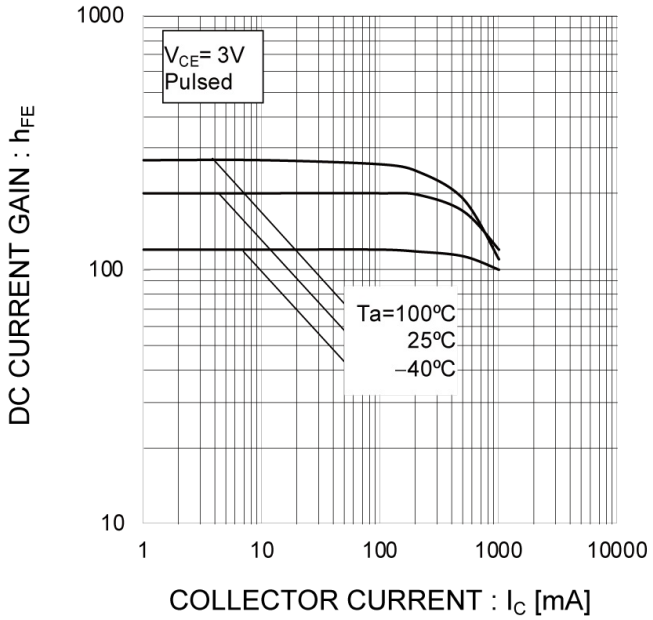
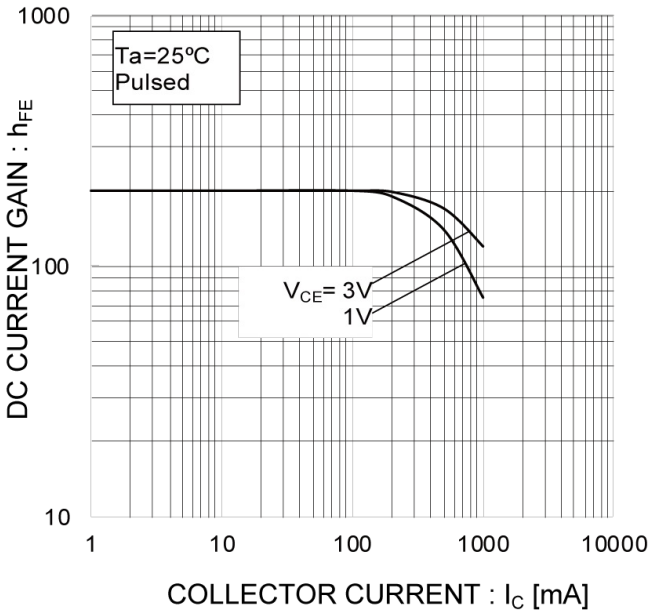


Fig.4 DC Current Gain vs. Collector Current (II)



●Electrical characteristic curves(T_a = 25°C)

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

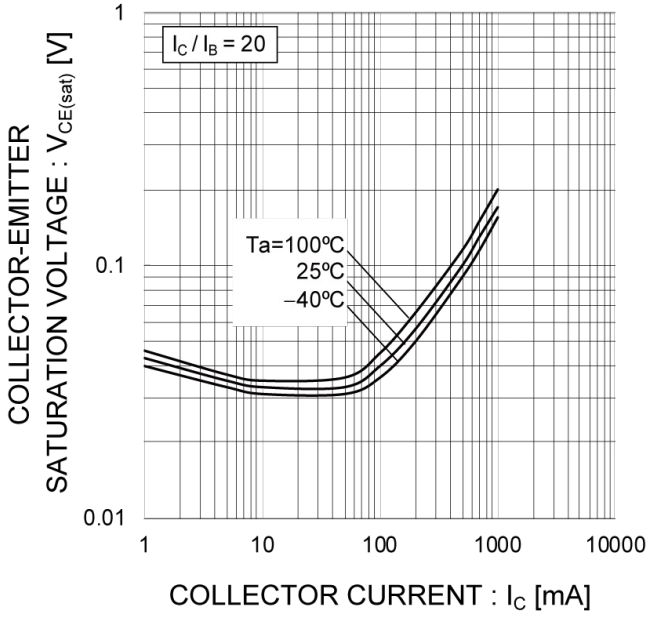


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

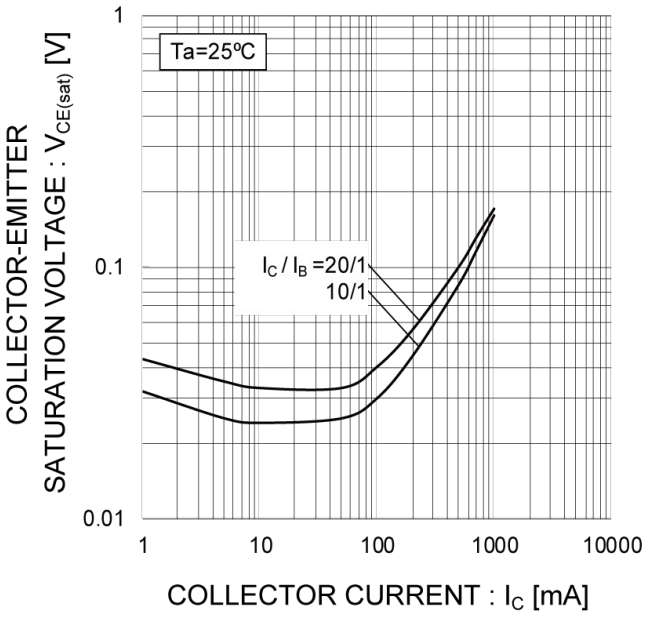


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

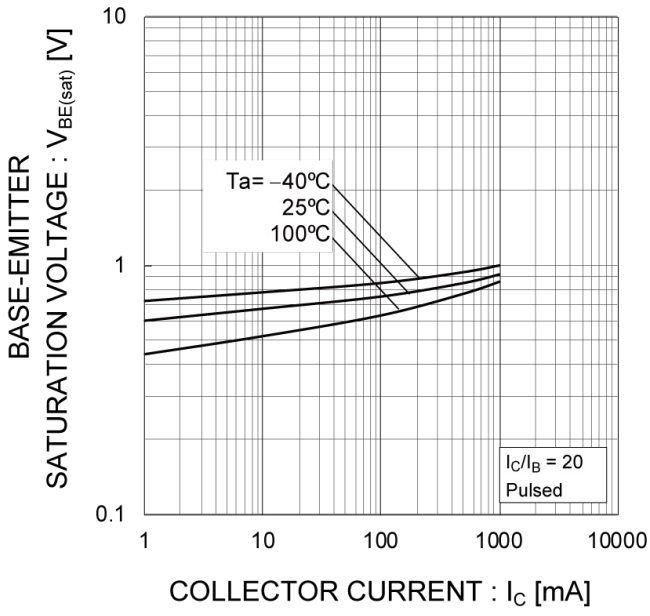
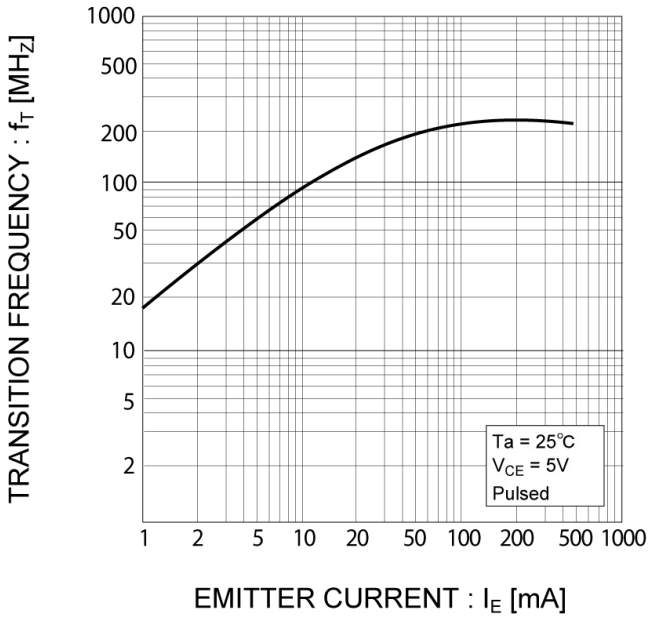


Fig.8 Gain Bandwidth Product vs. Emitter Current



●Electrical characteristic curves(T_a = 25°C)

Fig.9 Emitter input capacitance vs. Emitter-Base Voltage
Collector output capacitance vs. Collector-Base Voltage

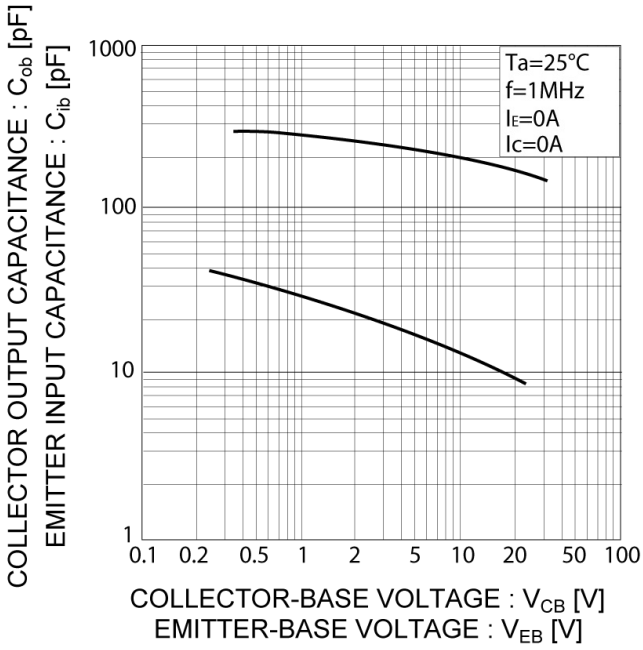
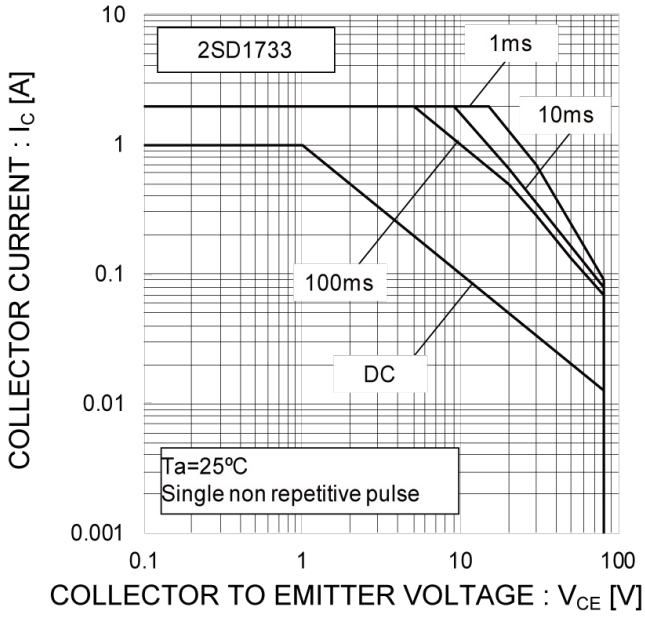
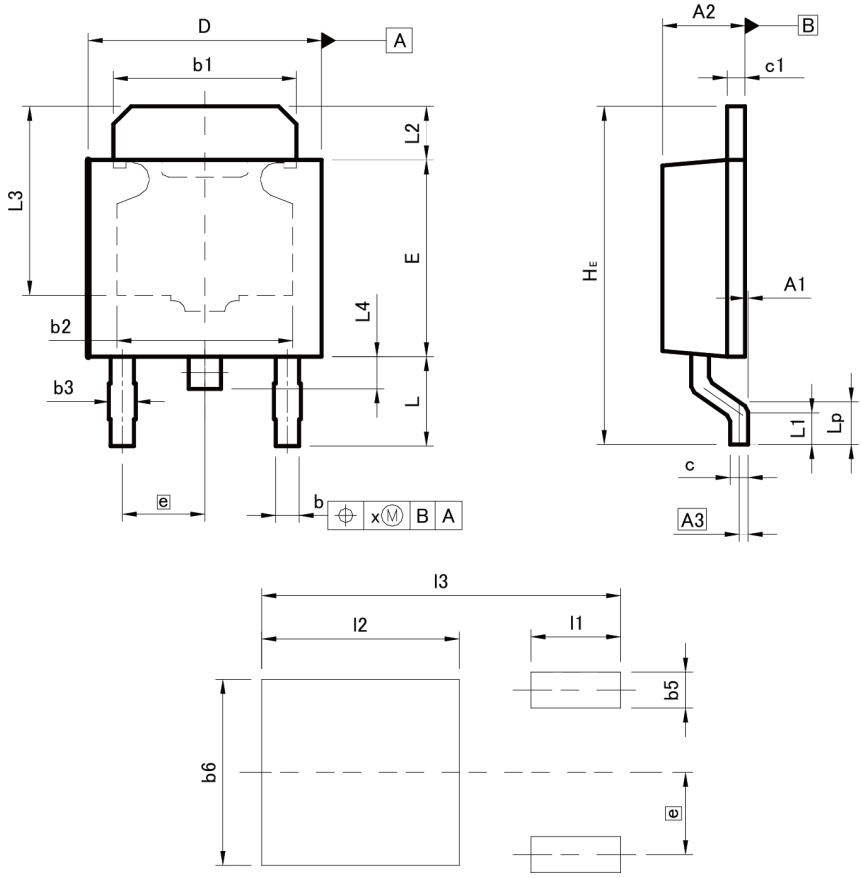


Fig.10 Safe Operating Area



●Dimensions

CPT



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

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A1	0.00	0.15	0.000	0.006
A2	2.20	2.50	0.087	0.098
A3	0.25		0.010	
b	0.55	0.75	0.022	0.030
b1	5.00	5.30	0.197	0.209
b2	5.00		0.197	
b3	0.75		0.030	
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.30	6.70	0.248	0.264
E	5.40	5.80	0.213	0.228
e	2.30		0.091	
HE	9.00	10.00	0.354	0.394
L	2.20	2.80	0.087	0.110
L1	0.80	1.40	0.031	0.055
L2	1.20	1.80	0.047	0.071
L3	5.30		0.209	
L4	0.90		0.035	
Lp	1.00	1.60	0.039	0.063
x	–	0.25	–	0.010

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b5	–	1.00	–	0.04
b6	–	5.20	–	0.205
l1	–	2.50	–	0.098
l2	–	5.50	–	0.217
l3	–	10.00	–	0.394

Dimension in mm/inches

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