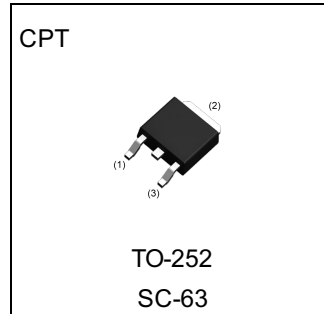


Parameter	Value
V_{CEO}	160V
I_C	1.5A

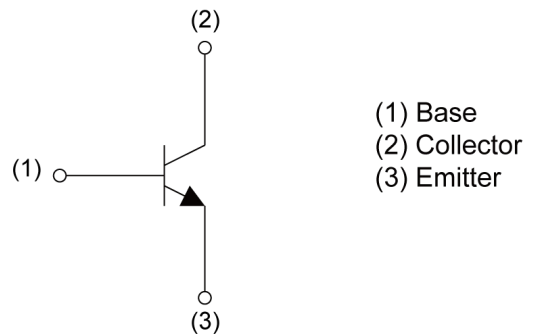
●Outline



●Features

- 1)High breakdown voltage. ($BV_{CEO}=160V$)
- 2)Low collector output capacitance.
(Typ. 20pF at $V_{CB}=10V$)
- 3)High transition frequency. ($f_T=80MHz$)
- 4)Complements the 2SB1275.

●Inner circuit



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

●Application

POWER AMPLIFIER, SWITCHING REGULATOR

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SD1918	CPT	6595	TL	330	16	2500	D1918

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

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	160	V
Collector-emitter voltage	V_{CEO}	160	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	1.5	A
	I_{CP}	3	A
Power dissipation	P_D	1.0	W
	P_D^{*1}	10	W
Junction temperature	T_j	150	$^\circ\text{C}$
Range of storage temperature	T_{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_{CBO}	$I_C = 50\mu\text{A}$	160	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{mA}$	160	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 50\mu\text{A}$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 160\text{V}$	-	-	1.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}$	-	-	1.0	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	1.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	1.5	V
DC current gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	120	-	390	-
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_E = -100\text{mA}, f = 30\text{MHz}$	-	80	-	MHz
Output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	-	20	-	pF

h_{FE} values are classified as follows :

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

*1 $T_c = 25^\circ\text{C}$

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

Fig.1 Ground Emitter Propagation Characteristics

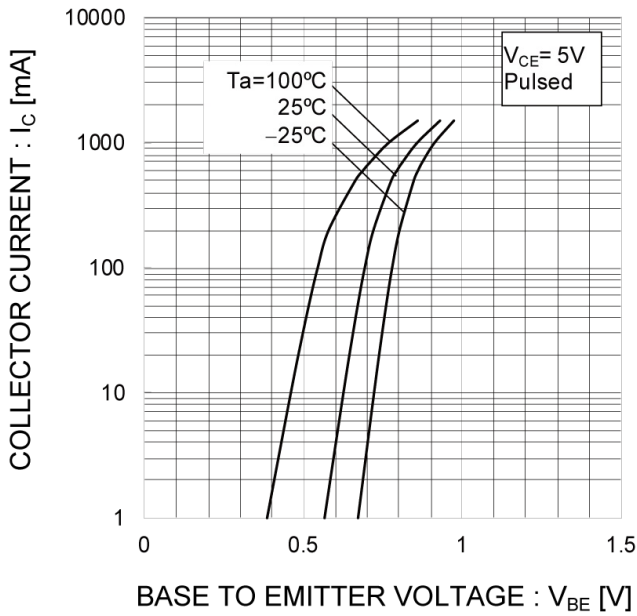


Fig.2 Typical Output Characteristics

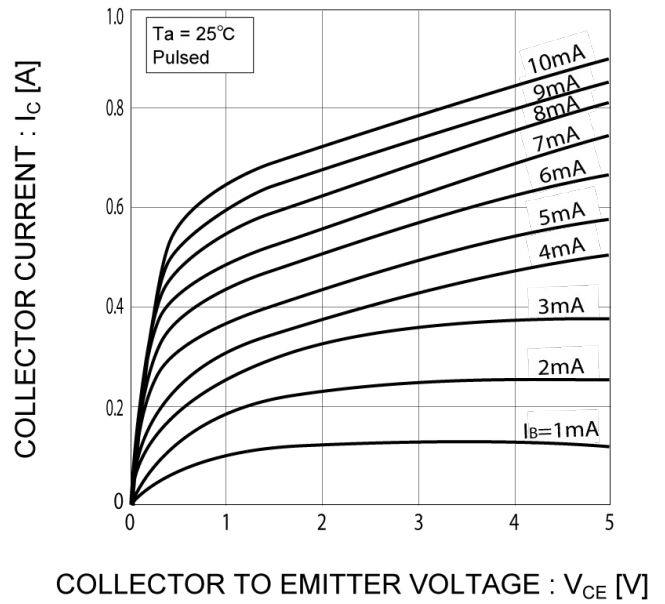


Fig.3 DC Current Gain vs. Collector Current (I)

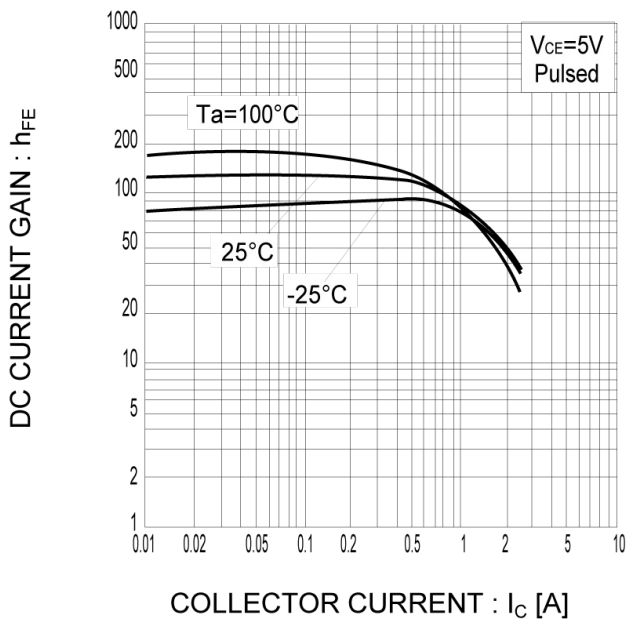
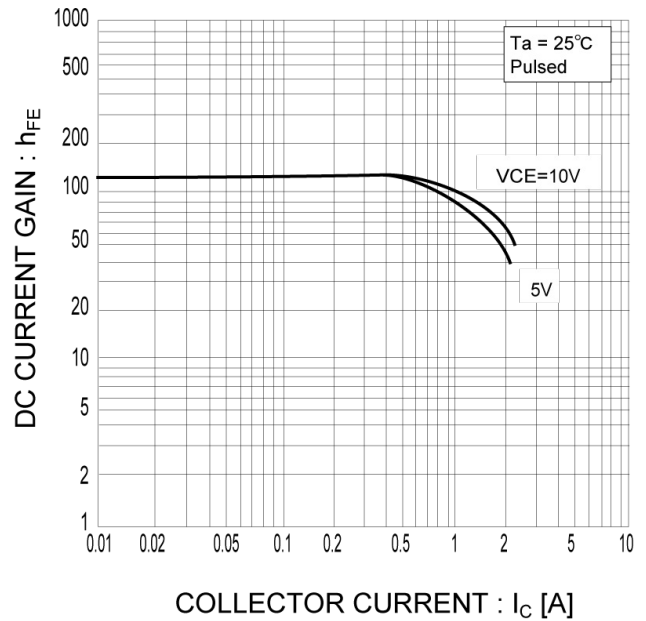


Fig.4 DC Current Gain vs. Collector Current (II)



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

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

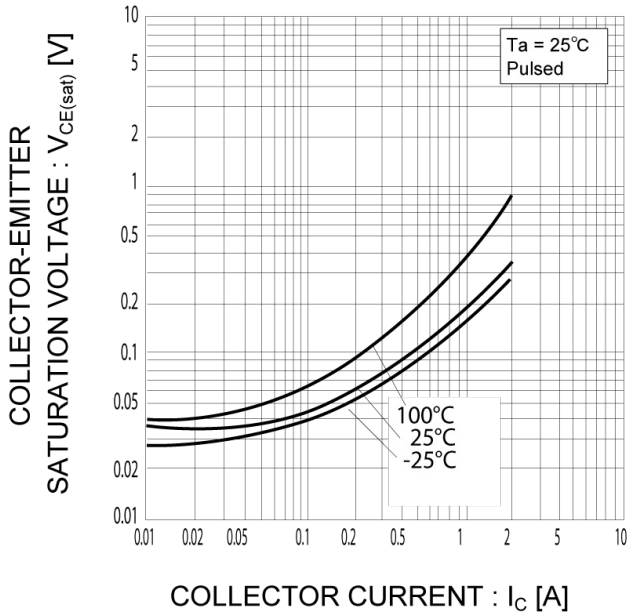


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

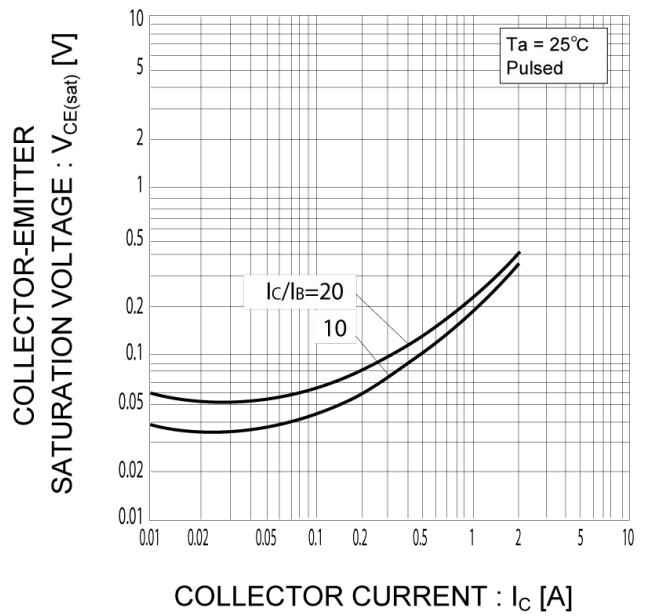


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

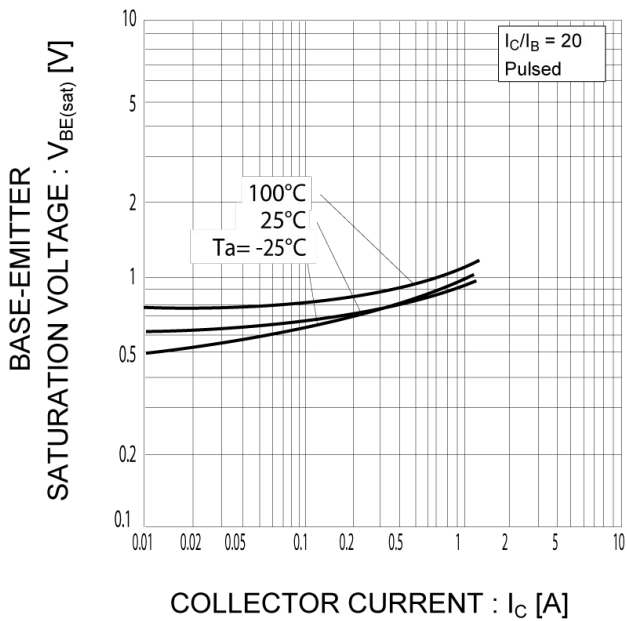
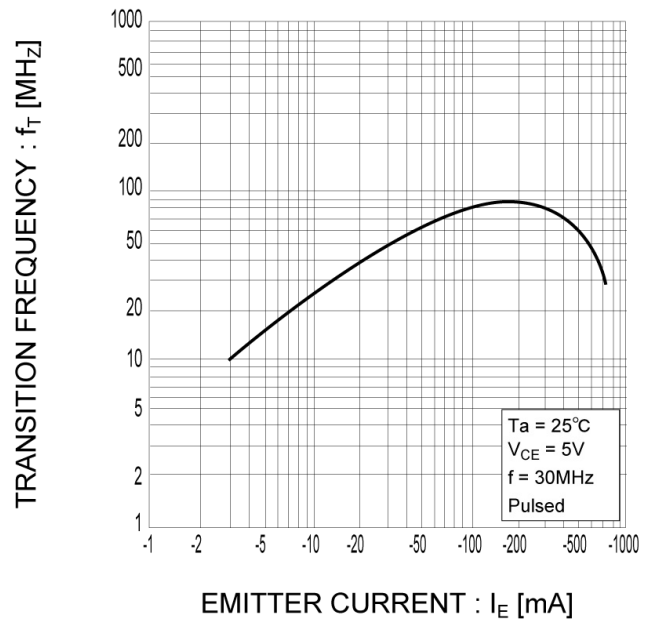


Fig.8 Gain Bandwidth Product vs. Emitter Current



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

Fig.9 Emitter Input Capacitance vs. Emitter-Base Voltage
Collector Output Capacitance vs. Collector-Base Voltage

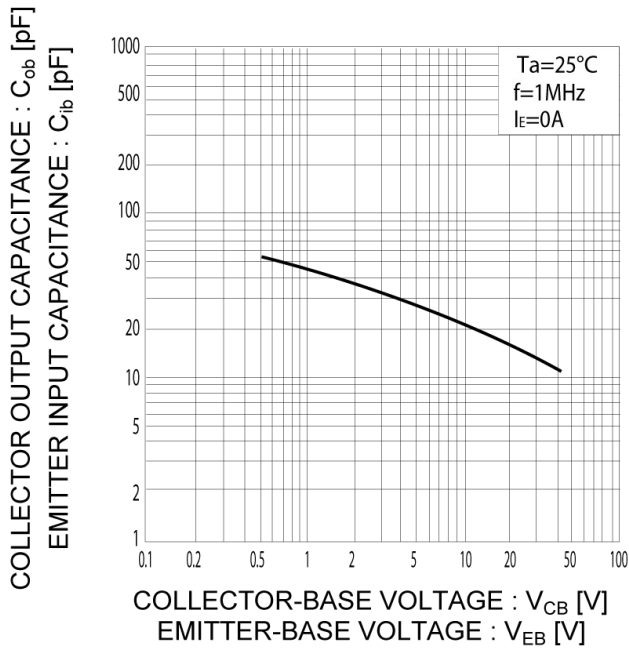
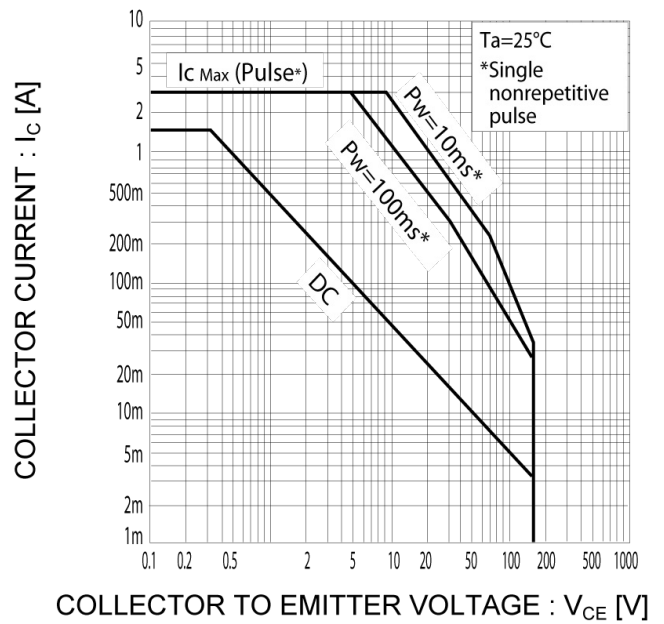
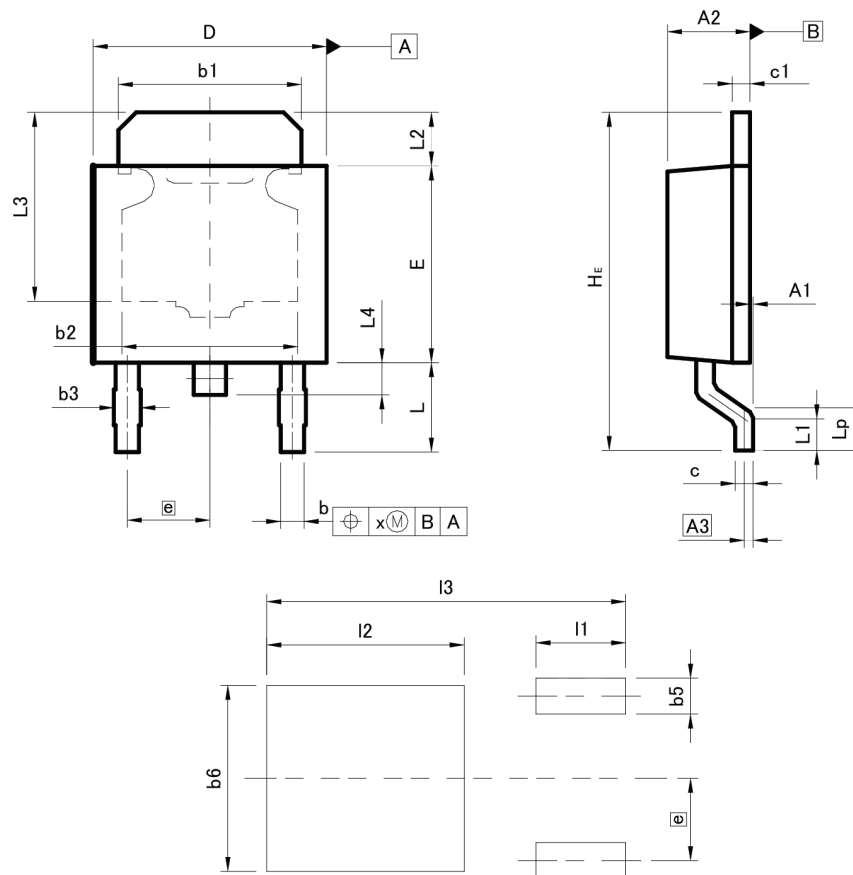


Fig.10 Safe Operating Area



●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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