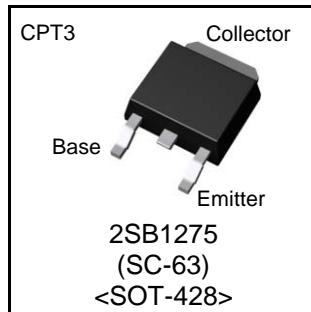
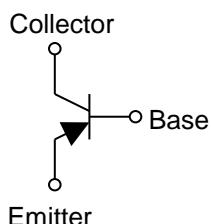


Parameter	Value
$V_{CEO}$	-160V
$I_C$	-1.5A

**●Outline****●Features**

- 1) Suitable for Middle Power Driver
- 2) Complementary NPN Types : 2SD1918
- 3) High voltage :  $V_{CEO} = -160V$
- 4) Lead Free/RoHS Compliant.

**●Inner circuit****●Applications**

Motor driver , LED driver  
Power supply

**●Packaging specifications**

Part No.	Package	Package size (mm)	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit (pcs)	Marking
2SB1275	CPT3	6595	TL	330	16	2,500	B1275

## ● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V <sub>CBO</sub>	-160	V
Collector-emitter voltage	V <sub>CEO</sub>	-160	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	DC I <sub>C</sub>	-1.5	A
	Pulsed I <sub>CP</sub> <sup>*1</sup>	-3.0	A
Power dissipation	P <sub>D</sub> <sup>*2</sup>	1	W
	P <sub>D</sub> <sup>*3</sup>	10	W
Junction temperature	T <sub>j</sub>	150	°C
Range of storage temperature	T <sub>stg</sub>	-55 to +150	°C

\*1 Pw=100ms, single pulse

\*2 Mounted on a substrate

\*3 Tc=25°C

## ● Electrical characteristics(Ta = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>C</sub> = -1mA	-160	-	-	V
Collector-base breakdown voltage	BV <sub>CBO</sub>	I <sub>C</sub> = -50μA	-160	-	-	V
Emitter-base breakdown voltage	BV <sub>EBO</sub>	I <sub>E</sub> = -50μA	-5	-	-	V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -120V	-	-	-1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -4V	-	-	-1	μA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> <sup>*4</sup>	I <sub>C</sub> = -1A, I <sub>B</sub> = -0.1A	-	-	-2	V
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -100mA	82	-	180	-
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>E</sub> = 100mA f=30MHz	-	50	-	MHz
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0A, f = 1MHz	-	30	-	pF

\*4 Pulsed

● h<sub>FE</sub> rank categories

Rank	P
h <sub>FE</sub>	82 to 180

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

Fig.1 Ground Emitter Propagation Characteristics

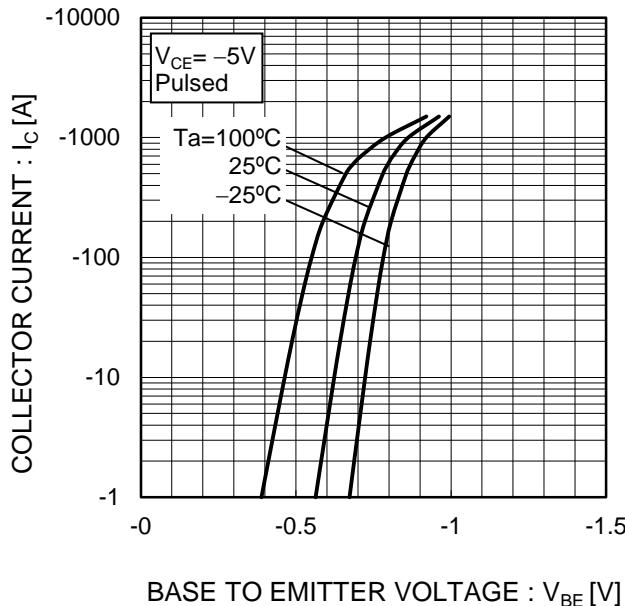


Fig.2 Typical Output Characteristics

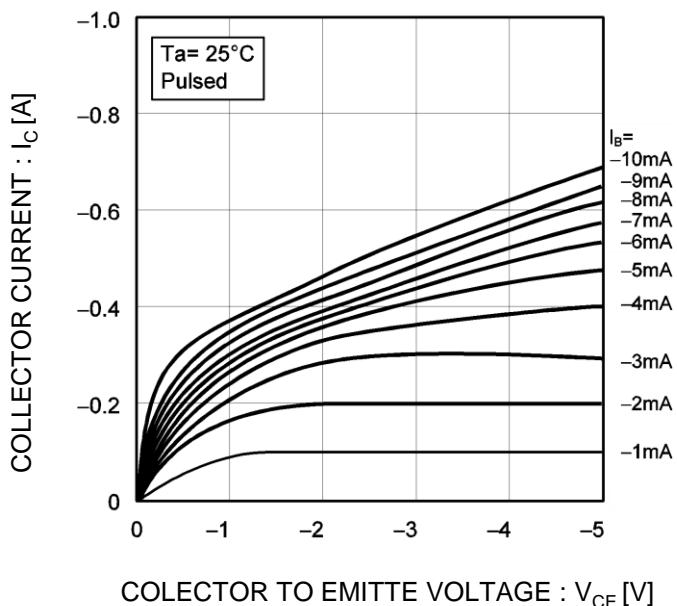


Fig.3 DC Current Gain vs. Collector Current( $I$ )

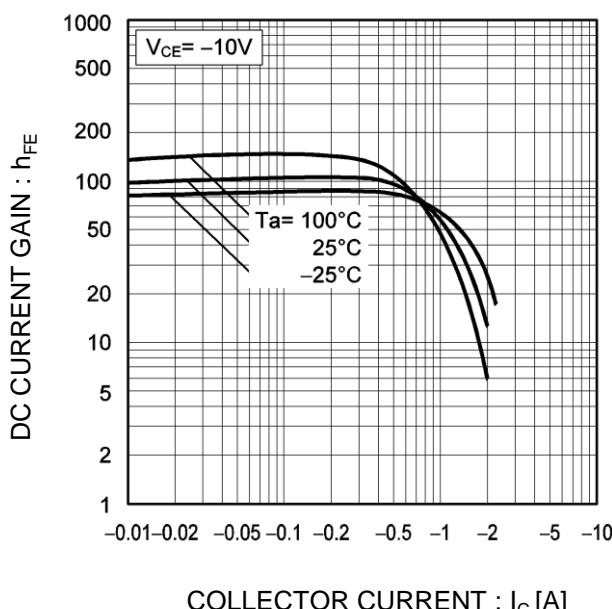
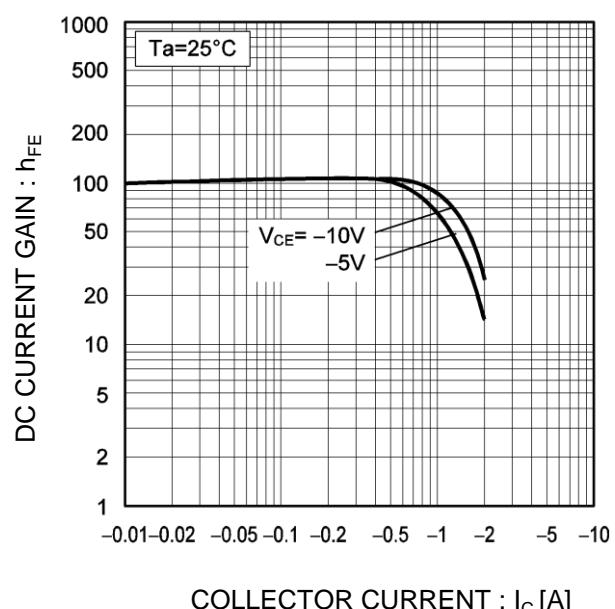


Fig.4 DC current gain vs. output current (II)



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

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

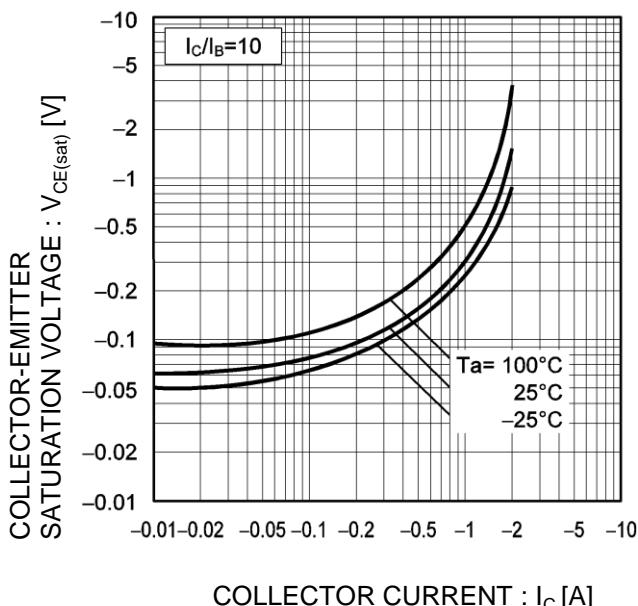


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

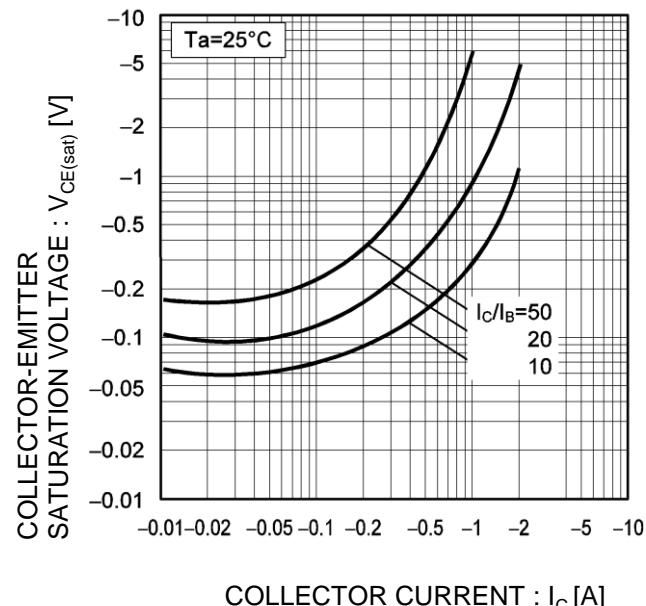


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

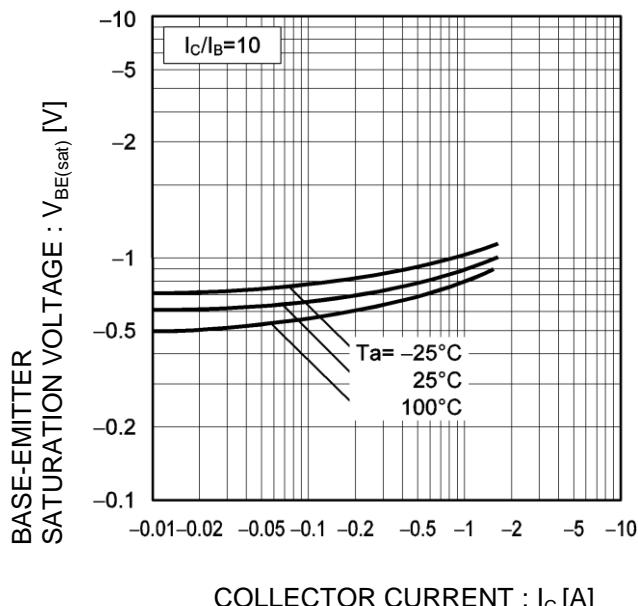
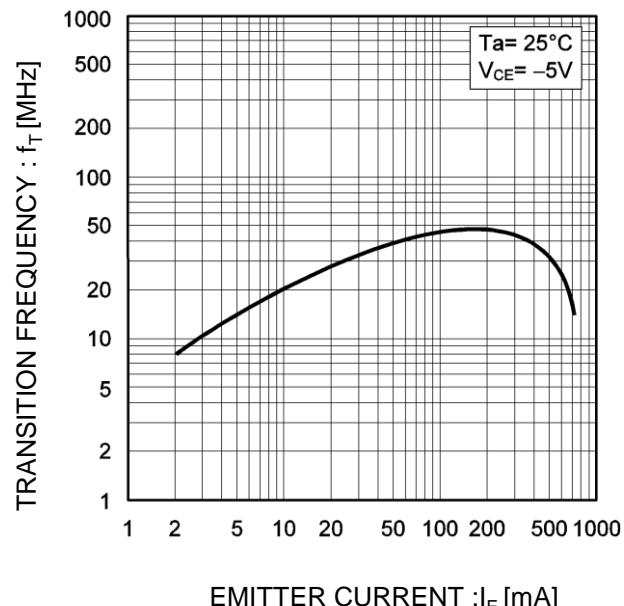


Fig.8 Gain Bandwidth Product vs. Emitter Current



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

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

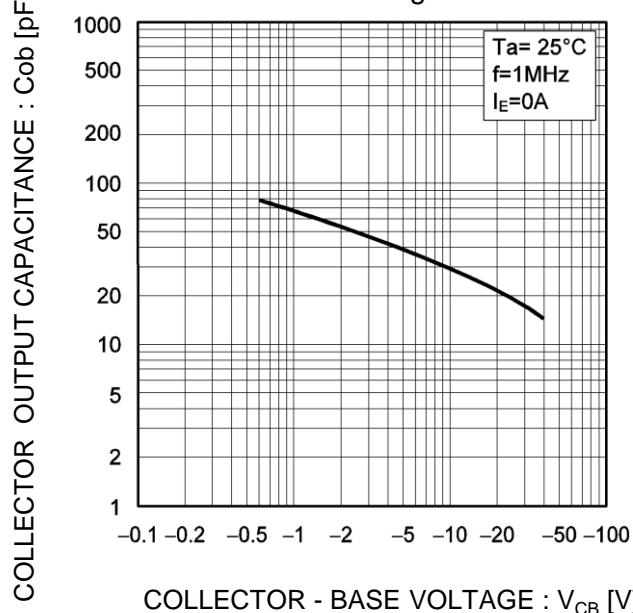
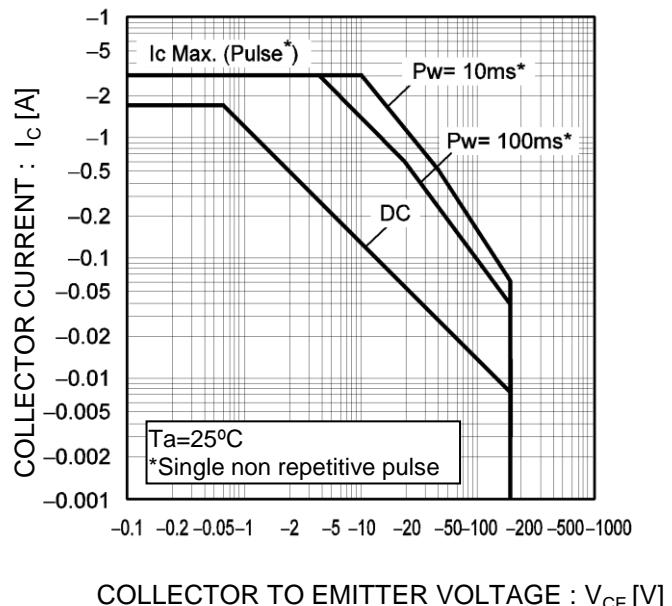
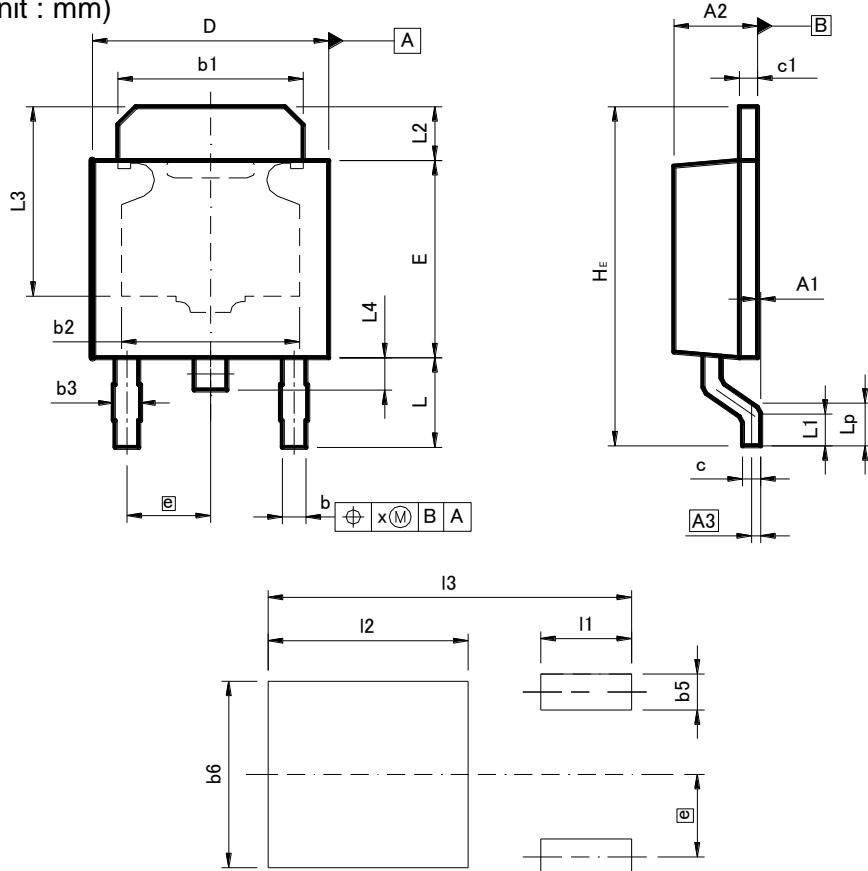


Fig.10 Safe Operating Area



## ●Dimensions (Unit : mm)

CPT3



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	
H <sub>E</sub>	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	
L <sub>p</sub>	1.00	1.60	0.039	0.063
x	—	0.25	—	0.010

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b <sub>5</sub>	—	1.00	—	0.04
b <sub>6</sub>	—	5.20	—	0.205
I <sub>1</sub>	—	2.50	—	0.098
I <sub>2</sub>	—	5.50	—	0.217
I <sub>3</sub>	—	10.00	—	0.394

Dimension in mm / inches

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