

# Transistors

## Power Transistor (50V, 3A)

### 2SD1760/2SD1864/2SD1762

#### ●Features

1) Low  $V_{CE(sat)}$ .

$$V_{CE(sat)} = 0.5V \text{ (Typ.)}$$

$$(I_C/I_B = 2A/0.2A)$$

2) Complements the

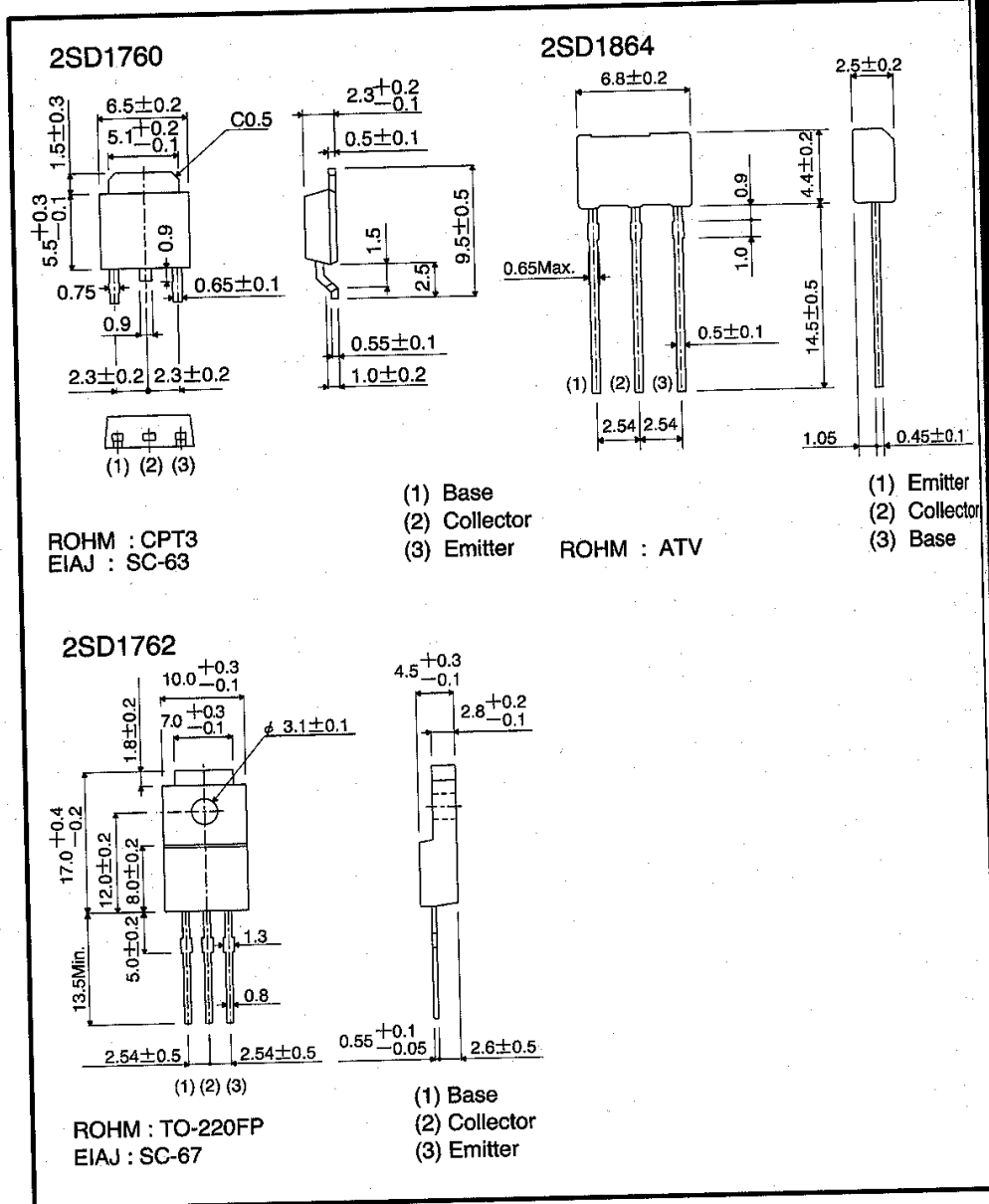
2SB1184/2SB1243/2SB1185.

#### ●Structure

Epitaxial planar type

NPN silicon transistor

#### ●External dimensions (Units: mm)



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	60	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	3	A (DC)
		4.5	A (Pulse) * 1
Collector power dissipation	2SD1760	15	W(Tc=25°C) * 2
	2SD1864	1	W
	2SD1762	25	W(Tc=25°C) * 2
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~150	°C

1 Single pulse Pw=10ms

2 Printed circuit board 1.7mm thick, collector copper plating 1cm<sup>2</sup> or larger.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	60	—	—	V	I <sub>c</sub> =50 μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	50	—	—	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	5	—	—	V	I <sub>E</sub> =50 μA
Collector cutoff current	I <sub>CB0</sub>	—	—	1	μA	V <sub>CB</sub> =40V
Emitter cutoff current	I <sub>EBO</sub>	—	—	1	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	0.5	1	V	I <sub>c</sub> /I <sub>B</sub> =2A/0.2A *
C current transfer ratio	h <sub>FE</sub>	82	—	390	—	V <sub>CE</sub> =3V, I <sub>c</sub> =0.5A *
		60	—	320		
Transition frequency	f <sub>T</sub>	—	90	—	MHz	V <sub>CE</sub> =5V, I <sub>E</sub> =-500mA, f=30MHz *
Output capacitance	C <sub>ob</sub>	—	40	—	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz

Measured using pulse current.

### Packaging specifications and h<sub>FE</sub>

Type	h <sub>FE</sub>	Package	Taping		Bulk
		Code	TL	TV2	—
		Basic ordering unit (pieces)	2500	2500	200
D1760	PQR	○	—	—	—
D1864	PQR	—	○	—	—
D1762	DEF	—	—	○	—

Values are classified as follows :

Item	P	Q	R
h <sub>FE</sub>	82~180	120~270	180~390

Item	D	E	F
h <sub>FE</sub>	60~120	100~200	160~320