

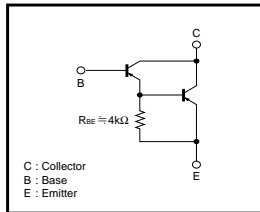
# Power transistor (−40V, −2A)

## 2SB1183 / 2SB1239

### ●Features

- 1) Darlington connection for high DC current gain.
- 2) Built-in 4kΩ resistor between base and emitter.
- 3) Complements the 2SD1759 / 2SD1861.

### ●Equivalent circuit

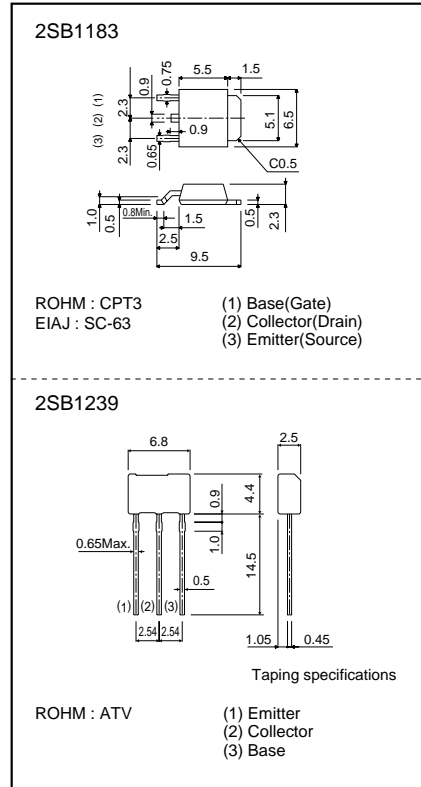


### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	−40	V
Collector-emitter voltage	V <sub>CER</sub>	−40	V
Emitter-base voltage	V <sub>EBO</sub>	−5	V
Collector current	I <sub>C</sub>	−2	A(DC)
		−3	A(Pulse) *1
Collector power dissipation	P <sub>C</sub>	1	W
		10	W(T <sub>C</sub> =25°C)
Junction temperature	T <sub>J</sub>	150	°C
		−55~+150	°C
Storage temperature	T <sub>stg</sub>	−55~+150	°C

\*1 Single pulse P<sub>w</sub>=10ms  
\*2 Printed circuit board 1.7 mm thick, collector plating 100mm<sup>2</sup> or larger.

### ●External dimensions (Units : mm)



### ●Packaging specifications and hFE

Type	2SB1183	2SB1239
Package	CPT3	ATV
hFE	1k~200k	1k~
Code	TL	T146
Basic ordering unit (pieces)	2500	2500

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	−40	−	−	V	I <sub>C</sub> =−50μA
Collector-emitter breakdown voltage	BV <sub>CER</sub>	−40	−	−	V	I <sub>C</sub> =−1mA, R <sub>SE</sub> =10kΩ
Emitter-base breakdown voltage	BV <sub>EBO</sub>	−5	−	−	V	I <sub>E</sub> =−50μA
Collector cutoff current	I <sub>CBO</sub>	−	−	−1	μA	V <sub>CB</sub> =−24V
Emitter cutoff current	I <sub>EBO</sub>	−	−	−1	μA	V <sub>EB</sub> =−4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	−	−	−1.5	V	I <sub>C</sub> /I <sub>B</sub> =−0.6A/−1.2mA
DC current transfer ratio	h <sub>FE</sub>	1000	−	20000	−	V <sub>CE</sub> /I <sub>C</sub> =−2V/−0.5A
		1000	−	−	−	
Output capacitance	C <sub>ob</sub>	−	11	−	pF	V <sub>CB</sub> =−10V, I <sub>E</sub> =0A, f=1MHz