

# 2SB1678

## Silicon PNP epitaxial planer type

For low-frequency amplification

### ■ Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- Large Peak collector current  $I_{CP}$
- Mini power type package, allowing downsizing and thinning of the equipment and automatic insertion through the tape packing

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	-30	V
Collector to emitter voltage	$V_{CEO}$	-20	V
Emitter to base voltage	$V_{EBO}$	-7	V
Peak collector current	$I_{CP}$	-5	A
Collector current	$I_C$	-3	A
Collector power dissipation *	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: Printed circuit board copper foil for collector portion

area:  $1.0\text{ Cm}^2$  or more, thickness: 1.7 mm

Absolute maximum rating  $P_C$  Without heat sink shall be 0.5 W

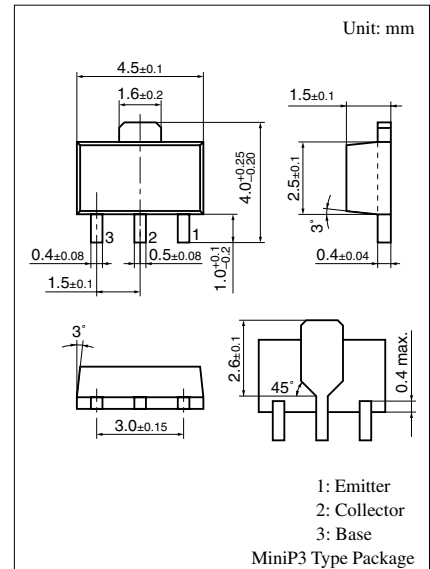
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -10\text{ V}, I_E = 0$			-100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-100	nA
Collector to emitter voltage	$V_{CEO}$	$I_C = -1\text{ mA}, I_B = 0$	-20			V
Emitter to base voltage	$V_{EBO}$	$I_E = -10\text{ }\mu\text{A}, I_C = 0$	-7			V
Forward current transfer ratio *1, 2	$h_{FE}$	$V_{CE} = -2\text{ V}, I_C = 200\text{ mA}$	90		625	
Collector to emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -3\text{ A}, I_B = -0.1\text{ A}$			-1	V
Collector output capacitance	$C_{ob}$	$V_{CB} = -20\text{ V}, I_E = 0, f = 1\text{ MHz}$			85	pF
Transition frequency	$f_T$	$V_{CB} = -6\text{ V}, I_E = 50\text{ mA}, f = 200\text{ MHz}$		120		MHz

Note) \*1: Pulse measurement

\*2: Rank classification

Rank	P	Q	R
$h_{FE}$	90 to 135	120 to 205	180 to 625



Marking Symbol: 2K