

Transistor

**Panasonic**

# 2SB1209

Silicon PNP triple diffusion planer type

For low-frequency amplification

## Features

- High collector to base voltage  $V_{CBO}$ .
- High collector to emitter voltage  $V_{CEO}$ .
- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .

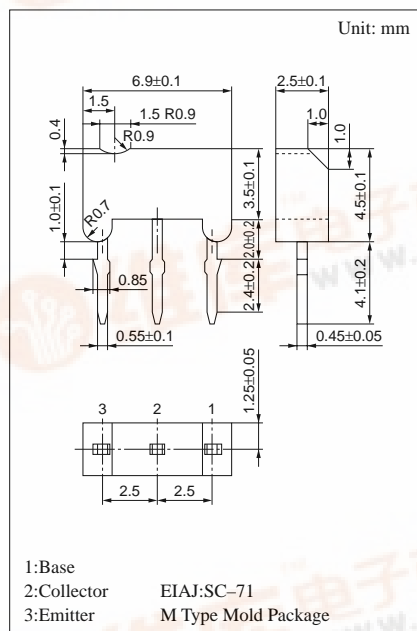
## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-400	V
Collector to emitter voltage	$V_{CEO}$	-400	V
Emitter to base voltage	$V_{EBO}$	-5	V
Peak collector current	$I_{CP}$	-200	mA
Collector current	$I_C$	-100	mA
Collector power dissipation	$P_C^*$	1	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

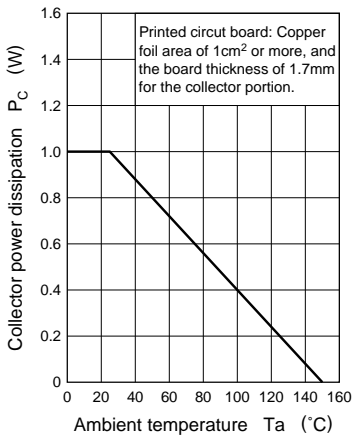
\* Printed circuit board: Copper foil area of 1cm<sup>2</sup> or more, and the board thickness of 1.7mm for the collector portion

## Electrical Characteristics (Ta=25°C)

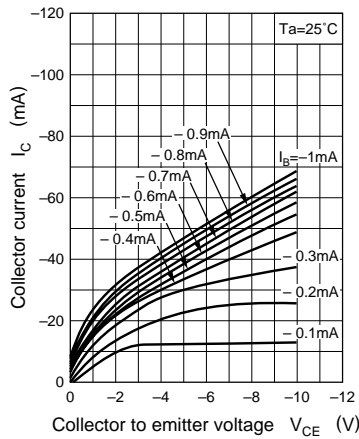
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	$V_{CBO}$	$I_C = -100\mu A, I_E = 0$	-400			V
Collector to emitter voltage	$V_{CEO}$	$I_C = -500\mu A, I_B = 0$	-400			V
Emitter to base voltage	$V_{EBO}$	$I_E = -100\mu A, I_C = 0$	-5			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = -5V, I_C = -30mA$	40			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10mA, I_B = -1mA$			-0.6	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50mA, I_B = -5mA$			-1.5	V
Transition frequency	$f_T$	$V_{CB} = -30V, I_E = 20mA, f = 200MHz$		50		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -30V, I_E = 0, f = 1MHz$			9	pF



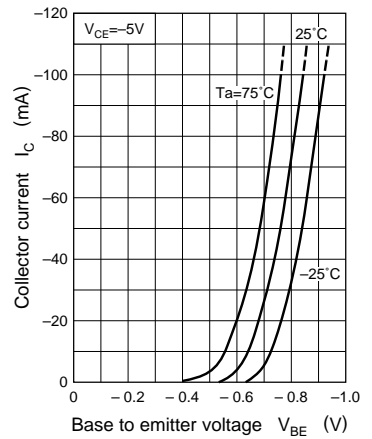
$P_C - T_a$



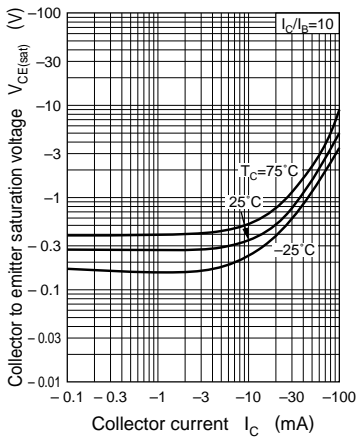
$I_C - V_{CE}$



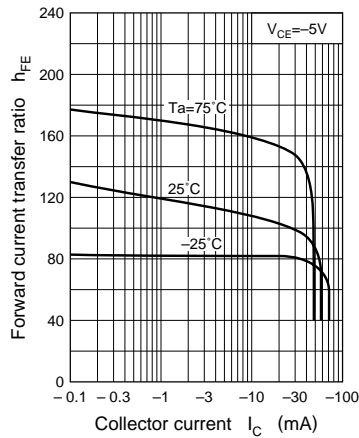
$I_C - V_{BE}$



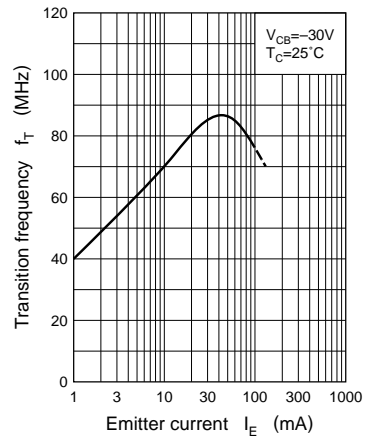
$V_{CE(sat)} - I_C$



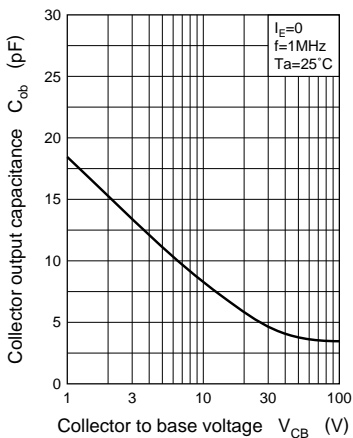
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)

