

# 2SB1651

## Silicon PNP epitaxial planer type

For low-frequency and low-noise amplification

### Features

- Low noise voltage NV.
- High forward current transfer ratio  $h_{FE}$ .
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

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

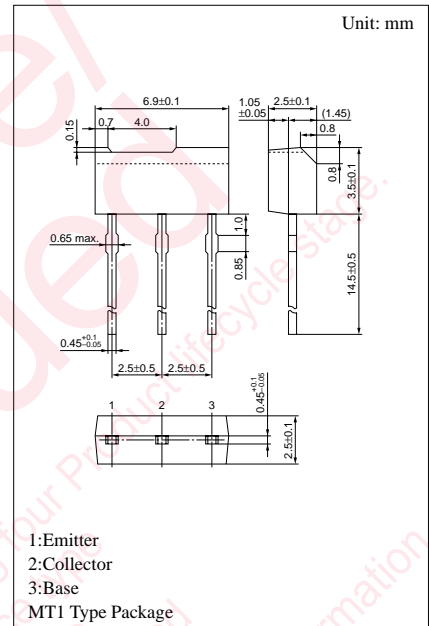
Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-55	V
Collector to emitter voltage	$V_{CEO}$	-55	V
Emitter to base voltage	$V_{EBO}$	-5	V
Peak collector current	$I_{CP}$	-200	mA
Collector current	$I_C$	-50	mA
Collector power dissipation	$P_C$	400	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

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

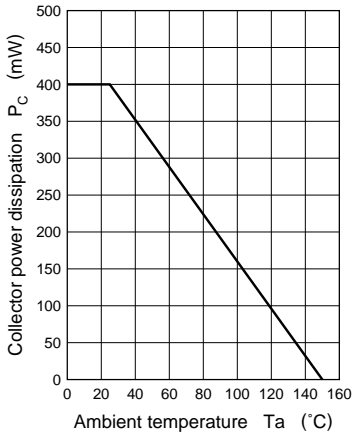
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -10V, I_E = 0$			-100	nA
	$I_{CEO}$	$V_{CE} = -10V, I_B = 0$			-1	μA
Collector to base voltage	$V_{CBO}$	$I_C = -10\mu A, I_E = 0$	-55			V
Collector to emitter voltage	$V_{CEO}$	$I_C = -2mA, I_B = 0$	-55			V
Emitter to base voltage	$V_{EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Forward current transfer ratio	$h_{FE}^{*1}$	$V_{CE} = -5V, I_C = -2mA$	180		700	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$			-0.6	V
Base to emitter voltage	$V_{BE}$	$V_{CE} = -1V, I_C = -100mA$			-1	V
Noise voltage	NV	$V_{CE} = -10V, I_C = -1mA, G_v = 80dB, R_g = 100k\Omega, \text{Function} = \text{FLAT}$		110		mV
Transition frequency	$f_T$	$V_{CB} = -5V, I_E = 2mA, f = 200MHz$		150		MHz

\*1 $h_{FE}$  Rank classification

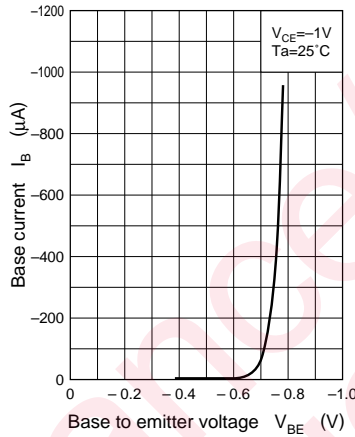
Rank	R	S	T
$h_{FE}$	180 ~ 360	260 ~ 520	360 ~ 700



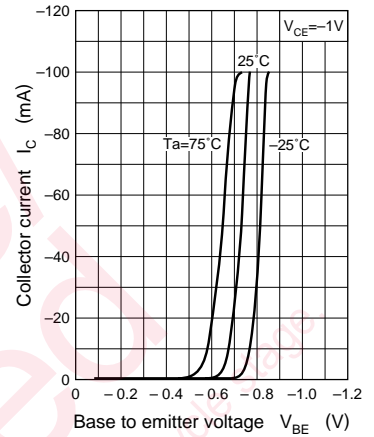
$P_C - T_a$



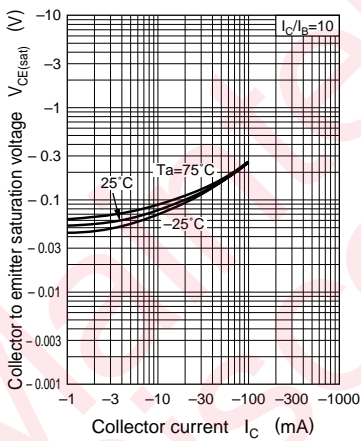
$I_B - V_{BE}$



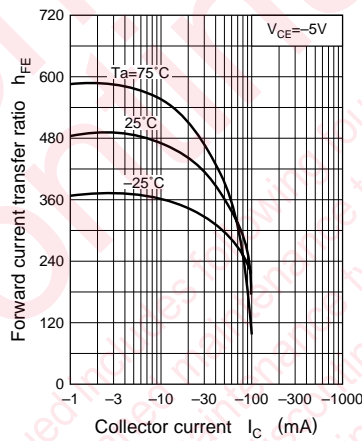
$I_C - V_{BE}$



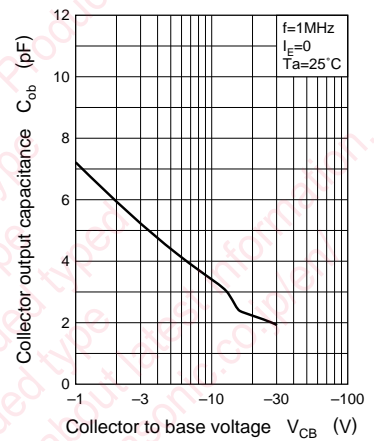
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$C_{ob} - V_{CB}$



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