

2SB1605, 2SB1605A

Silicon PNP epitaxial planar type

For low-frequency power amplification

Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Full-pack package with outstanding insulation, which can be installed to the heat sink with one screw

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Rated	Unit
Collector to base voltage	2SB1605	-60	V
	2SB1605A	-80	
Collector to emitter voltage	2SB1605	-60	V
	2SB1605A	-80	
Emitter to base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-5	A
Collector current	I_C	-3	A
Collector power dissipation	$T_C=25^\circ\text{C}$	35	W
	$T_a=25^\circ\text{C}$	2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	2SB1605	$V_{CE} = -60\text{V}, V_{BE} = 0$			-200	μA
	2SB1605A					
Collector cutoff current	2SB1605	$V_{CE} = -30\text{V}, I_B = 0$			-300	μA
	2SB1605A					
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-1	mA
Collector to emitter voltage	2SB1605	$I_C = -30\text{mA}, I_B = 0$	-60			V
	2SB1605A		-80			
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	70		250	
	h_{FE2}	$V_{CE} = -4\text{V}, I_C = -3\text{A}$	10			
Base to emitter voltage	V_{BE}	$V_{CE} = -4\text{V}, I_C = -3\text{A}$			-1.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{A}, I_B = -0.375\text{A}$			-1.2	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 10\text{MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = -1\text{A}, I_{B1} = -0.1\text{A}, I_{B2} = 0.1\text{A}$		0.5		μs
Storage time	t_{stg}			1.2		μs
Fall time	t_f			0.3		μs

* h_{FE1} Rank classification

Rank	Q	P
h_{FE1}	70 to 150	120 to 250



