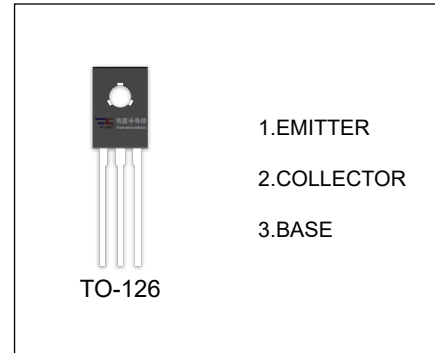


## 2SB649 / 2SB649A TRANSISTOR (PNP)

### FEATURES

- Low Frequency Power Amplifier Complementary Pair with 2SD669 / 2SD669A



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2SB649	TO-126	Bulk	200pcs/Bag
2SB649A	TO-126	Bulk	200pcs/Bag
2SB649-TU	TO-126	Tube	60pcs/Tube
2SB649A-TU	TO-126	Tube	60pcs/Tube

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector- Base Voltage	-180	V
V <sub>CEO</sub>	Collector-Emitter Voltage	2SB649	-120
		2SB649A	-160
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-1.5	A
P <sub>C</sub>	Collector Dissipation	1	W
T <sub>J</sub> ,T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55-150	°C

$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -1\text{mA}, I_E = 0$	-180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	2SB649	-120		V
			2SB649A	-160		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\text{mA}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -160\text{V}, I_E = 0$			-10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0$			-10	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$	2SB649	60		320
			2SB649A	60		200
	$h_{FE(2)}$	$V_{CE} = -5\text{V}, I_C = -500\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-1	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$			-1.5	V
Transition frequency	$f_T$	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$		140		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		27		pF

#### CLASSIFICATION OF $h_{FE(1)}$

Rank		B	C	D
Range	2SB649	60-120	100-200	160-320
	2SB649A	60-120	100-200	