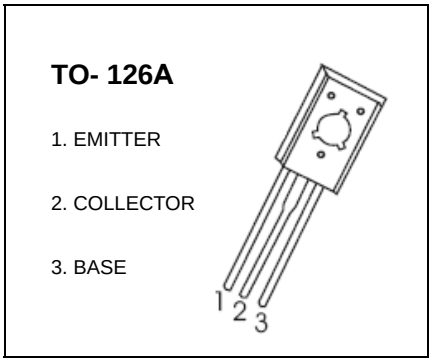
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-126A Plastic-Encapsulate Transistors

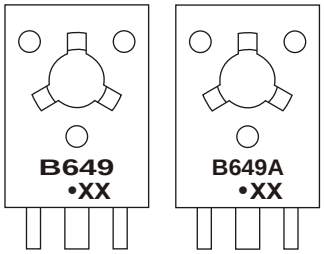
2SB649 / 2SB649A TRANSISTOR (PNP)



FEATURES

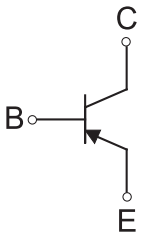
- Low Frequency Power Amplifier Complementary Pair with 2SD669 / 2SD669A

MARKING



B649 , B649A=Device code
Solid dot = Green molding compound device, if none, the normal device
XX=Code

Equivalent Circuit



ORDERING INFORMATION

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

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CBO}	Collector- Base Voltage		-180	V
V_{CEO}	Collector-Emitter Voltage	2SB649	-120	V
		2SB649A	-160	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current -Continuous		-1.5	A
P_C	Collector Dissipation		1	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-55-150	℃

ELECTRICAL CHARACTERISTICS

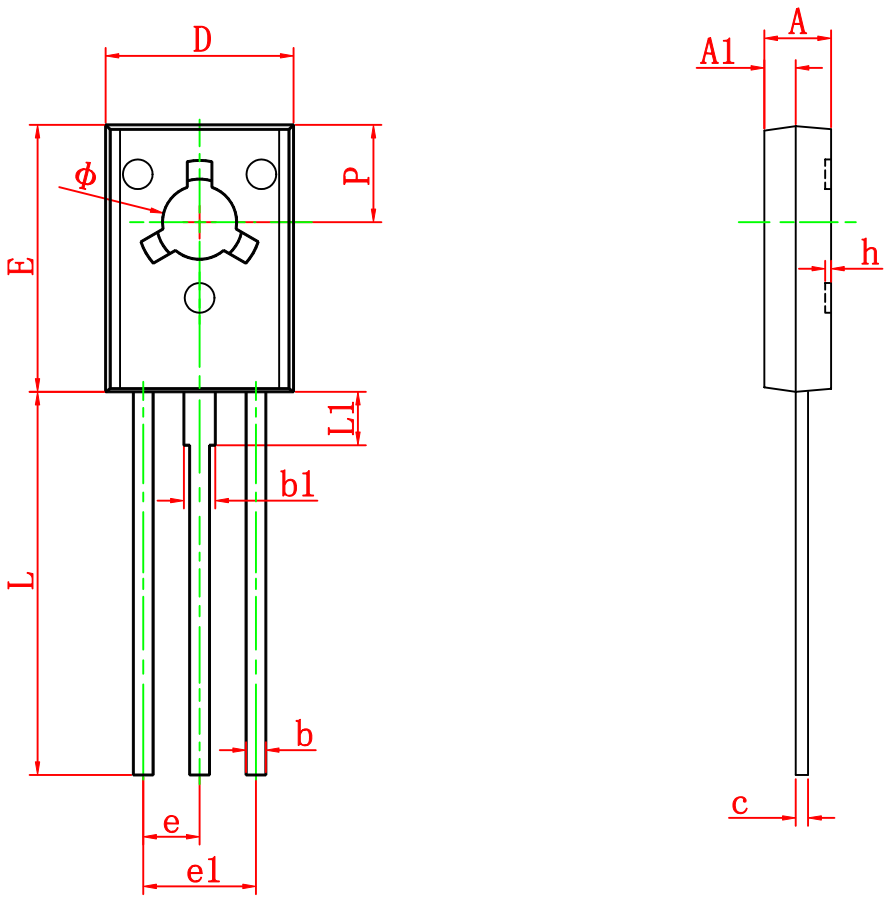
T_a=25℃ unless otherwise specified

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

CLASSIFICATION OF $h_{FE(1)}$

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

TO-126A Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.300	0.600	0.012	0.024
D	7.400	7.800	0.291	0.307
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
h	0.000	0.300	0.000	0.012
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126