



## TO-126C Plastic-Encapsulate Transistors

**2SD669**

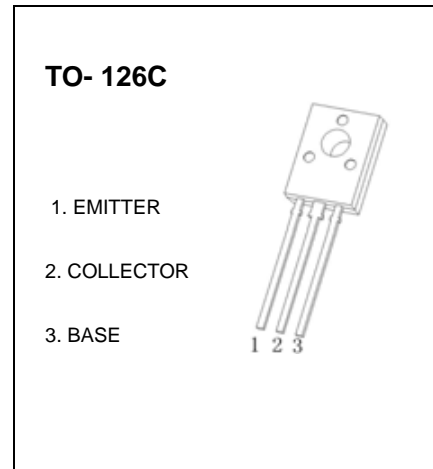
**2SD669A** TRANSISTOR (NPN)

### FEATURES

- Low Frequency Power Amplifier Complementary Pair with 2SB649/A

### 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	2SD669	120
		2SD669A	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>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



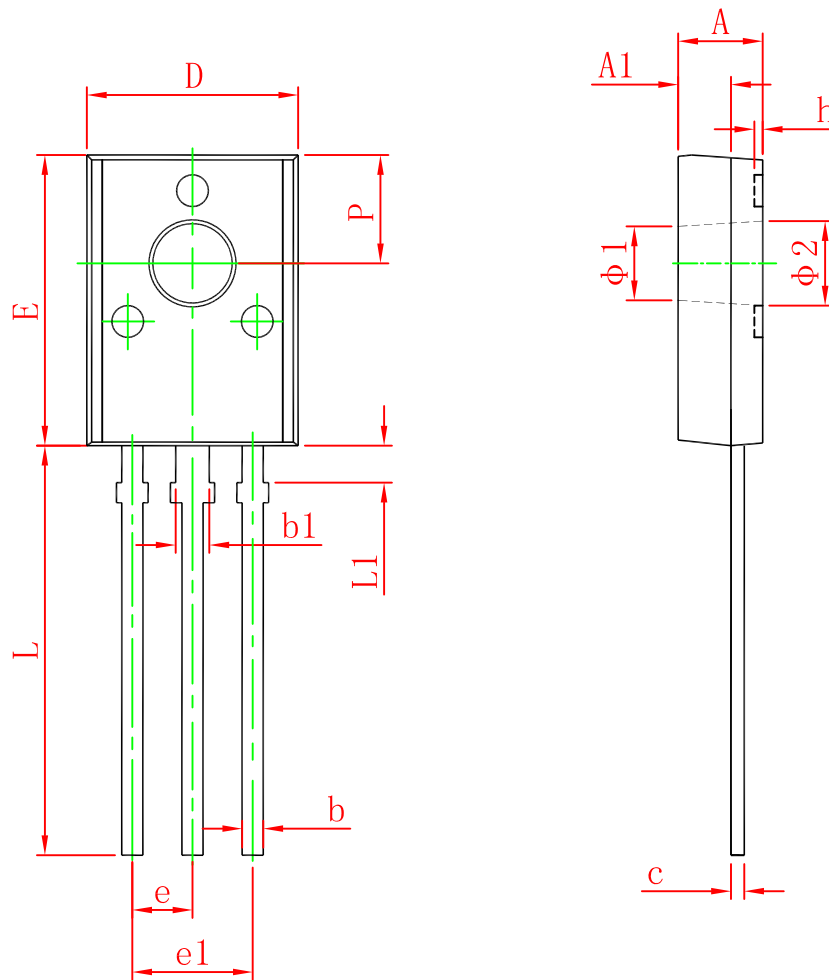
### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	180			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	2SD669	120		V
			2SD669A	160		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =160V, I <sub>E</sub> =0			10	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			10	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =150mA	2SD669	60	320	
			2SD669A	60	200	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =500mA	30			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			1	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =150mA			1.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =150mA		140		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		14		pF

### CLASSIFICATION OF h<sub>FE(1)</sub>

Rank		B	C	D
Range	2SD669	60-120	100-200	160-320
	2SD669A	60-120	100-200	

# TO-126C Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.000	3.400	0.118	0.134
A1	1.800	2.200	0.071	0.087
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.450	0.600	0.018	0.024
D	7.800	8.200	0.307	0.323
E	10.800	11.200	0.425	0.441
e	2.280 TYP.		0.090 TYP.	
e1	4.460	4.660	0.176	0.183
L	15.300	15.700	0.602	0.618
L1	1.300	1.500	0.051	0.059
P	4.040	4.240	0.159	0.167
$\phi 1$	2.700	2.900	0.106	0.114
$\phi 2$	3.100	3.300	0.122	0.130