



**TO-3P Plastic-Encapsulate Transistors**

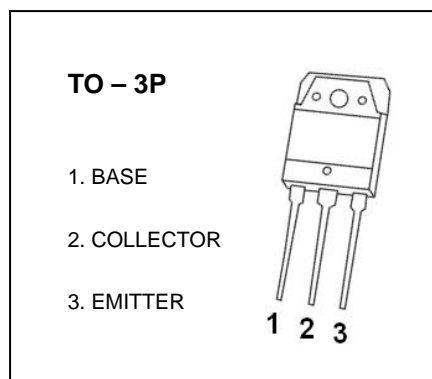
**2SB688** TRANSISTOR (PNP)

**FEATURES**

- High Breakdown Voltage
- Complement to Type 2SD718

**APPLICATIONS**

- Power Amplifier Applications



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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-120	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-120	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current	-8	A
P <sub>C</sub>	Collector Power Dissipation	3	W
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	42	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150	°C

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

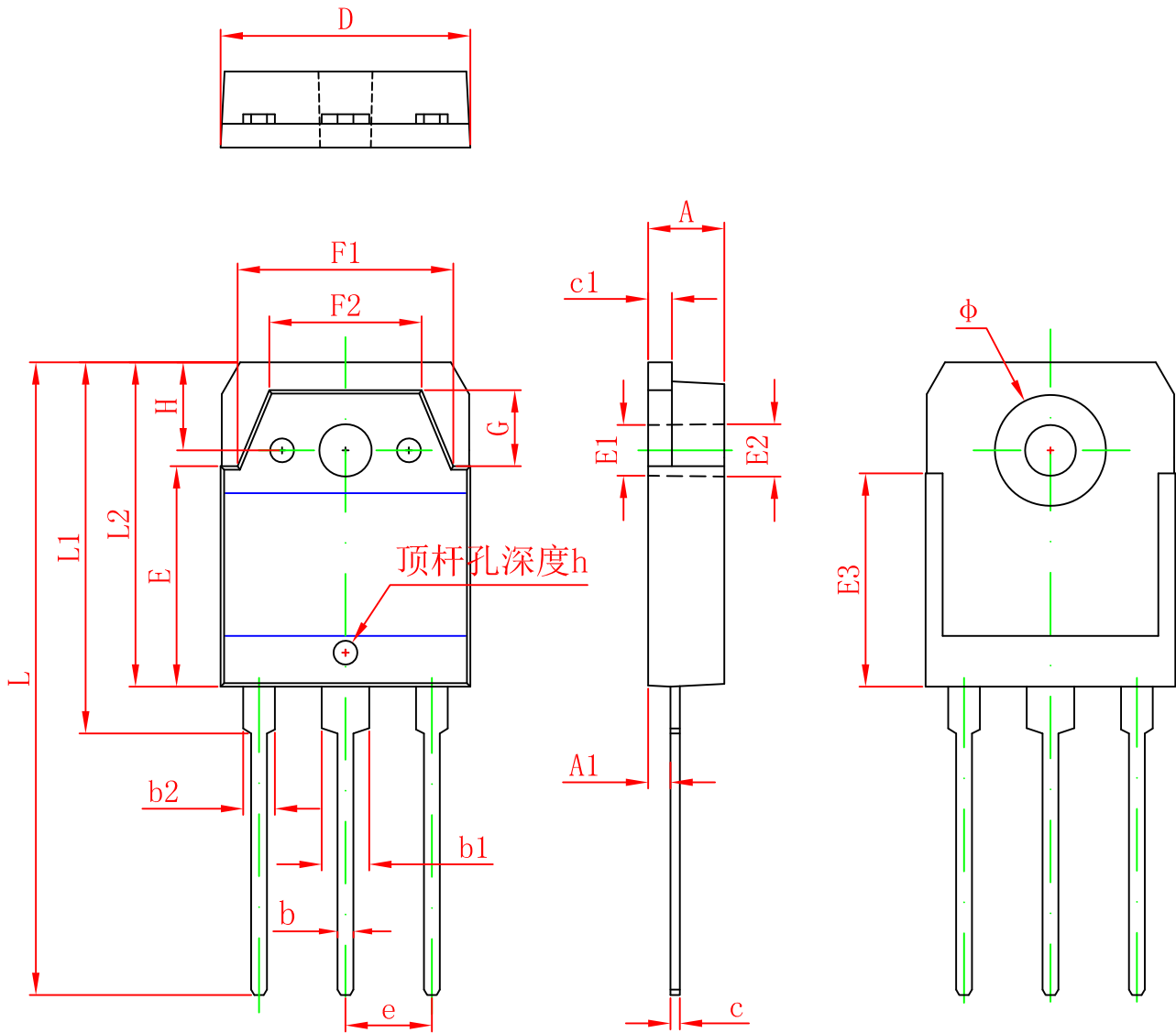
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100μA, I <sub>E</sub> =0	-120			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub> *	I <sub>C</sub> =-50mA, I <sub>B</sub> =0	-120			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-100μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-120V, I <sub>E</sub> =0			-10	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0			-10	μA
DC current gain	h <sub>FE</sub> *	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A	55		160	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> *	I <sub>C</sub> =-5A, I <sub>B</sub> =-500mA			-2.5	V
Base-emitter voltage	V <sub>BE</sub> *	V <sub>CE</sub> =-5V, I <sub>C</sub> =-5A			-1.5	V
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz		280		pF
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A, f=1MHz		10		MHz

\*Pulse test

**CLASSIFICATION OF h<sub>FE</sub>**

RANK	R	O
RANGE	55-110	80-160

# TO-3P Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.600	5.000	0.181	0.197
A1	1.200	1.600	0.047	0.063
b	0.800	1.200	0.031	0.047
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.450	1.650	0.057	0.065
D	15.450	15.850	0.608	0.624
E	13.700	14.100	0.539	0.555
E1	3.200 REF		0.126 REF	
E2	3.300 REF		0.130 REF	
E3	13.450 REF		0.530 REF	
F1	13.400	13.800	0.528	0.543
F2	9.400	9.800	0.370	0.386
L	39.900	40.300	1.571	1.587
L1	23.200	23.600	0.913	0.929
L2	20.300	20.600	0.799	0.811
Φ	6.900	7.100	0.272	0.280
G	5.150	5.550	0.203	0.219
e	5.450 TYP		0.215 TYP	
H	5.000 REF		0.197 REF	
h	0.000	0.300	0.000	0.012