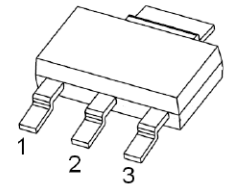


### Features

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: GSBCP69 (PNP)



**SOT-223**

1. BASE
2. COLLECTOR
3. EMITTER

### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	32	V
Collector-Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current –Continuous	I <sub>C</sub>	1	A
Collector Power Dissipation	P <sub>C*</sub>	1	mW
Junction Temperature	T <sub>J</sub>	94	°C
Storage Temperature	T <sub>STG</sub>	-65 to +150	°C

### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

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	32	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	20	-	-	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> =25V, I <sub>E</sub> =0	-	-	0.1	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0	-	-	0.1	μA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	85	-	375	-
	h <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =1A	60	-	-	-
	h <sub>FE(3)</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =5mA	50	-	-	-
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =100mA	-	-	0.5	V
Base-Emitter Voltage	V <sub>BE1</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =5mA	-	-	0.68	V
	V <sub>BE2</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =1A	-	-	1	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz	40	-	-	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =5V, I <sub>E</sub> =0, f=1MHz	-	38	-	pF

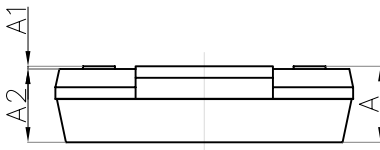
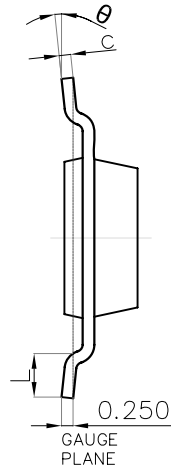
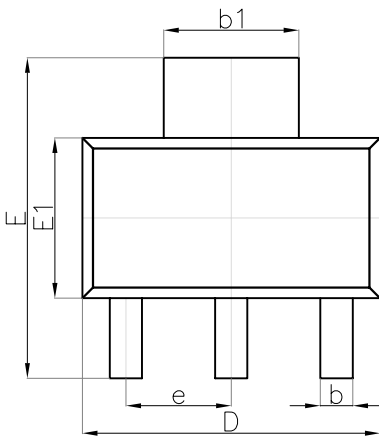
Capacitance

### Classification of h<sub>FE</sub>(1)

Rank	GSBCP68-10	GSBCP68-16	GSBCP68-25
Range	85-160	100-250	160-375

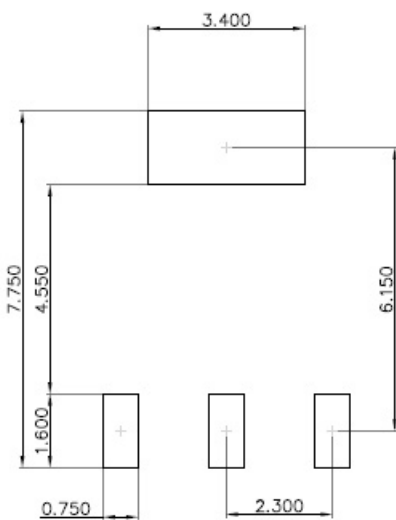
**Package Outline Dimensions**

SOT-223



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
θ	0°	10°	0°	10°

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.050mm.
3. The pad layout is for reference purposes only.