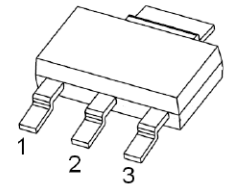


**Features**

- 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** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	32	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current –Continuous	$I_C$	1	A
Collector Power Dissipation	$P_{C^*}$	1	mW
Junction Temperature	$T_J$	94	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-65 to +150	$^{\circ}\text{C}$

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	32	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	20	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5	-	-	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=25\text{V}, I_E=0$	-	-	0.1	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$	-	-	0.1	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=500\text{mA}$	85	-	375	-
	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=1\text{A}$	60	-	-	-
	$h_{FE(3)}$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	50	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=100\text{mA}$	-	-	0.5	V
Base-Emitter Voltage	$V_{BE1}$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	-	-	0.68	V
	$V_{BE2}$	$V_{CE}=1\text{V}, I_C=1\text{A}$	-	-	1	V
Transition Frequency	$f_T$	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	40	-	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=5\text{V}, I_E=0, f=1\text{MHz}$	-	38	-	pF

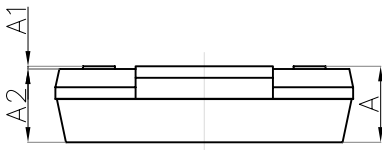
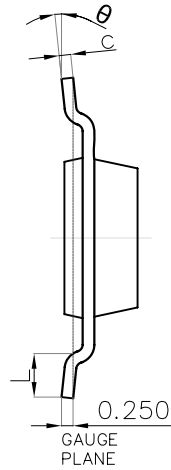
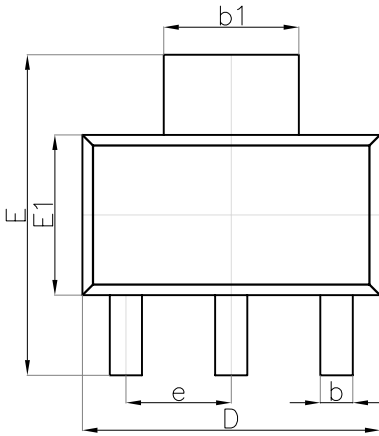
Capacitance

**Classification of  $h_{FE(1)}$**

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

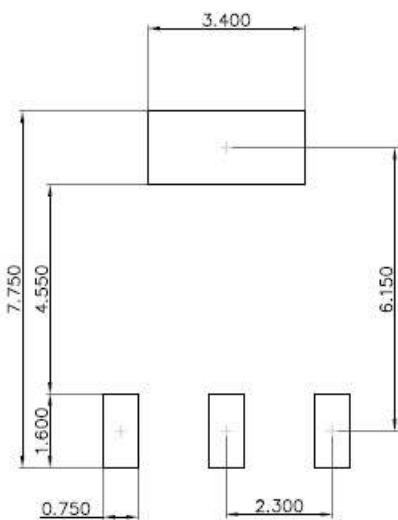
**Package Outline Dimensions**

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.