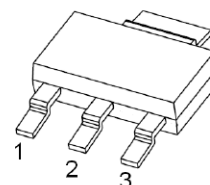


## Features

- High current and low voltage
- NPN complement: GSBCP68
- General purpose switching and amplification
- Power applications such as audio output stages



**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	$V_{CB0}$	-32	V
Collector-Emitter Voltage	$V_{CE0}$	-20	V
Emitter-Base Voltage	$V_{EB0}$	-5	V
Collector Current	$I_c$	-1	A
Collector Power Dissipation	$P_c$	1	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ\text{C}$

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

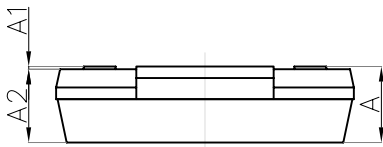
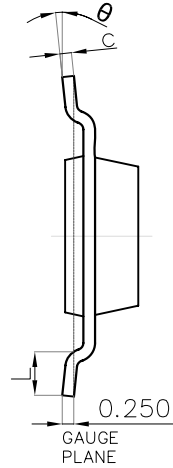
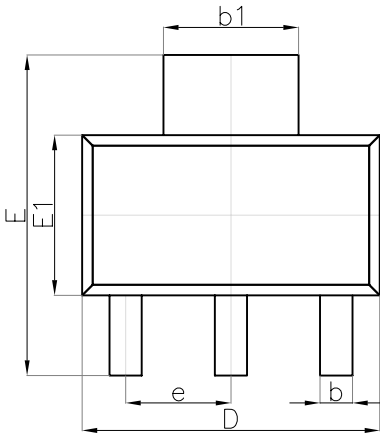
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_c=-0.1\text{mA}, I_E=0$	-32	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_c=-1\text{mA}, I_B=0$	-20	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-0.1\text{mA}, I_c=0$	-5	-	-	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-25\text{V}, I_E=0$	-	-	-100	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-5\text{V}, I_c=0$	-	-	-100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-1\text{V}, I_c=-0.5\text{A}$	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	-	-	-
	$h_{FE(4)}$	$V_{CE}=-1.8\text{V}, I_c=-10\text{mA}$	140	-	230	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_c=-1\text{A}, I_B=-100\text{mA}$	-	-	-0.5	V
Base-Emitter Voltage	$V_{BE(1)}$	$V_{CE}=-10\text{V}, I_c=-5\text{mA}$	-	-	-0.68	V
	$V_{BE(2)}$	$V_{CE}=-1\text{V}, I_c=-1\text{A}$	-	-	-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	$C_{ob}$	$V_{CB}=-5\text{V}, I_E=0$ , $f=1\text{MHz}$	-	48	-	pF

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

Rank	GSBCP69-16	GSBCP69-25
Range	100-250	160-375

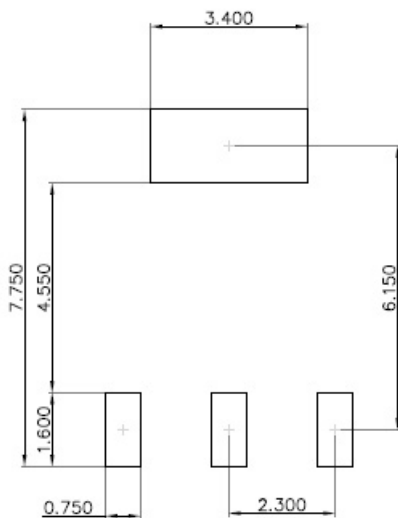
**Package Outline Dimensions**

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.