

TRANSISTOR (NPN)

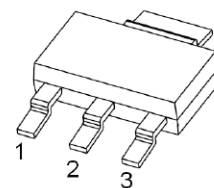
FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCP69 (PNP)

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	32	V
V _{CE0}	Collector-Emitter Voltage	20	V
V _{EB0}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	1	A
P _C	Collector Power Dissipation	1	W
R _{θJA}	Thermal Resistance Junction to Ambient	94	°C/W
T _{stg}	Storage Temperature Range	-65~+150	°C

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

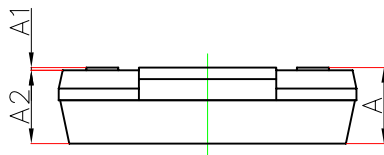
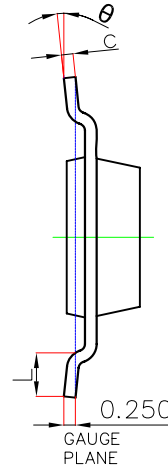
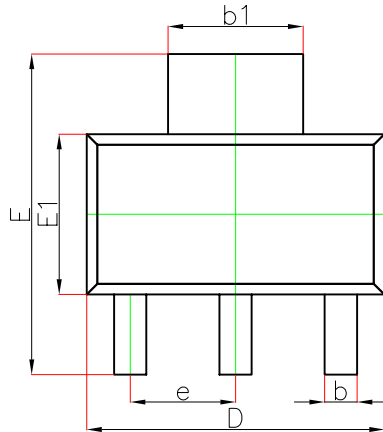
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	32			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	20			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =25V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =1V, I _C =500mA	85		375	
	h _{FE(2)}	V _{CE} =1V, I _C =1A	60			
	h _{FE(3)}	V _{CE} =10V, I _C =5mA	50			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1A, I _B =100mA			0.5	V
Base-emitter voltage	V _{BE1}	V _{CE} =10V, I _C =5mA			0.68	V
	V _{BE2}	V _{CE} =1V, I _C =1A			1	V
Transition frequency	f _T	V _{CE} =5V, I _C =10mA, f=100MHz	40			MHz
Collector output capacitance	C _{ob}	V _{CB} =5V, I _E =0, f=1MHz		38		pF

CLASSIFICATION OF h_{FE(1)}

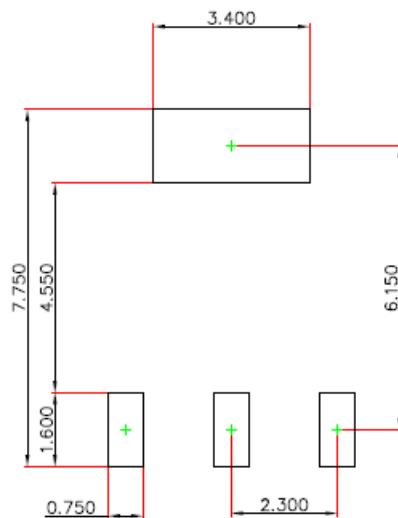
Rank	BCP68-10	BCP68-16	BCP68-25
Range	85-160	100-250	160-375

SOT-223 Package Outline Dimensions



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°

SOT-223 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.050\text{mm}$.
3. The pad layout is for reference purposes only.