

**■ Features**

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary to BCP54,BCP55,BCP56


**SOT-223**

1. BASE
2. COLLECTOR
3. EMITTER

**■ Absolute Maximum Ratings Ta = 25°C**

Parameter	Symbol	BCP51	BCP52	BCP53	Unit
Collector - Base Voltage	V <sub>CB0</sub>	-45	-60	-100	V
Collector - Emitter Voltage	V <sub>CEO</sub>	-45	-60	-80	
Emitter - Base Voltage	V <sub>EBO</sub>	-5			
Collector Current - Continuous	I <sub>C</sub>	-1			A
Collector Power Dissipation	P <sub>C</sub>	1.5			W
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	94			°C/W
Junction Temperature	T <sub>J</sub>	150			°C
Storage Temperature Range	T <sub>stg</sub>	-65 to 150			

**■ Electrical Characteristics Ta = 25°C**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BCP51	I <sub>C</sub> = -100 μA, I <sub>E</sub> = 0	-45			V
	BCP52		-60			
	BCP53		-100			
Collector- emitter breakdown voltage	BCP51	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-45			V
	BCP52		-60			
	BCP53		-80			
Emitter - base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = -100 μA, I <sub>C</sub> = 0	-5			
Collector-base cut-off current	BCP51	I <sub>CBO</sub>	V <sub>CB</sub> = -45 V, I <sub>E</sub> = 0			μA
	BCP52		V <sub>CB</sub> = -60 V, I <sub>E</sub> = 0		-0.1	
	BCP53		V <sub>CB</sub> = -100 V, I <sub>E</sub> = 0			
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> =0			-0.1	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-0.5	
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-1.2	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -500mA			-1	
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -5mA	25			
	h <sub>FE(2)</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -150mA	63		250	
	h <sub>FE(3)</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -500mA	25			
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA, f=100MHz	100			MHz

**■ Classification of h<sub>FE(2)</sub>**

Type	BCP51-10,BCP52-10,BCP53-10	BCP51-16,BCP52-16,BCP53-16
Range	63-160	100-250

**■ Electrical Characteristics Ta = 25°C**

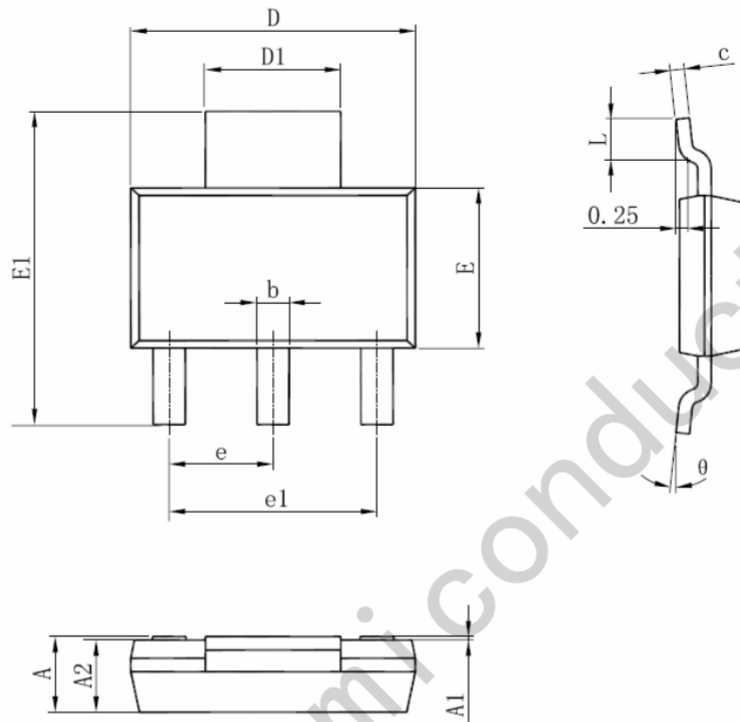
Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BCP51	V <sub>CB0</sub>	I <sub>C</sub> = -100 μA, I <sub>E</sub> = 0	-45			V
	BCP52			-60			
	BCP53			-100			
Collector- emitter breakdown voltage	BCP51	V <sub>CEO</sub>	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-45			V
	BCP52			-60			
	BCP53			-80			
Emitter - base breakdown voltage		V <sub>EB0</sub>	I <sub>E</sub> = -100 μA, I <sub>C</sub> = 0	-5			
Collector-base cut-off current	BCP51	I <sub>CB0</sub>	V <sub>CB</sub> = -45 V, I <sub>E</sub> = 0			-0.1	μA
	BCP52		V <sub>CB</sub> = -60 V, I <sub>E</sub> = 0				
	BCP53		V <sub>CB</sub> = -100 V, I <sub>E</sub> = 0				
Emitter cut-off current		I <sub>EB0</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> =0			-0.1	
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-0.5	V
Base - emitter saturation voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-1.2	
Base-emitter voltage		V <sub>BE</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -500mA			-1	
DC current gain	h <sub>FE(1)</sub>		V <sub>CE</sub> = -2V, I <sub>C</sub> = -5mA	25			
	h <sub>FE(2)</sub>		V <sub>CE</sub> = -2V, I <sub>C</sub> = -150mA	63		250	
	h <sub>FE(3)</sub>		V <sub>CE</sub> = -2V, I <sub>C</sub> = -500mA	25			
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA, f=100MHz	100			MHz

**■ Classification of h<sub>FE(2)</sub>**

TypE	BCP51-10,BCP52-10,BCP53-10	BCP51-16,BCP52-16,BCP53-16
Range	63-160	100-250

## Package Information

SOT-223



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.060	0.071
A1	0.000	0.100	0.000	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.820	0.026	0.032
c	0.250	0.350	0.010	0.014
D	6.200	6.400	0.244	0.252
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	0.278
e	2.300(BSC)		0.091(BSC)	
e1	4.500	4.700	0.177	0.185
L	0.900	1.150	0.035	0.045
θ	0°	10°	0°	10°

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