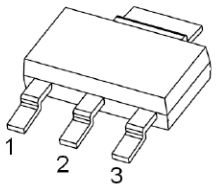
BCP54/55/56

TRANSISTOR (NPN)

FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCP51 ... BCP53 (PNP)

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

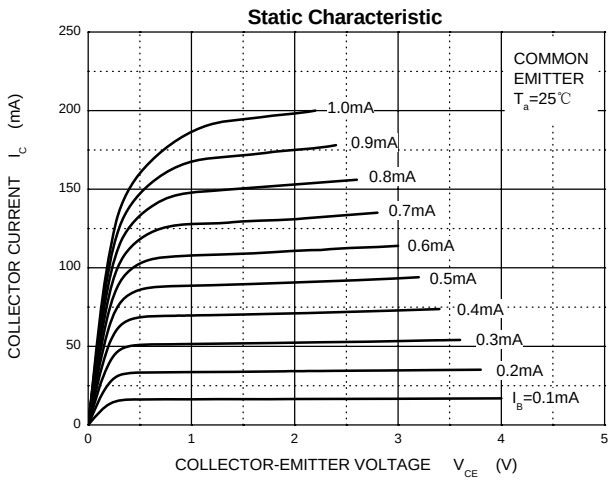
Symbol	Parameter	BCP54	BCP55	BCP56	Unit
V_{CBO}	Collector-Base Voltage	45	60	100	V
V_{CEO}	Collector-Emitter Voltage	45	60	80	V
V_{EBO}	Emitter-Base Voltage	5			V
I_C	Collector Current -Continuous	1			A
P_C	Collector Power Dissipation	1.5			W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150			℃
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	83.3			℃/W

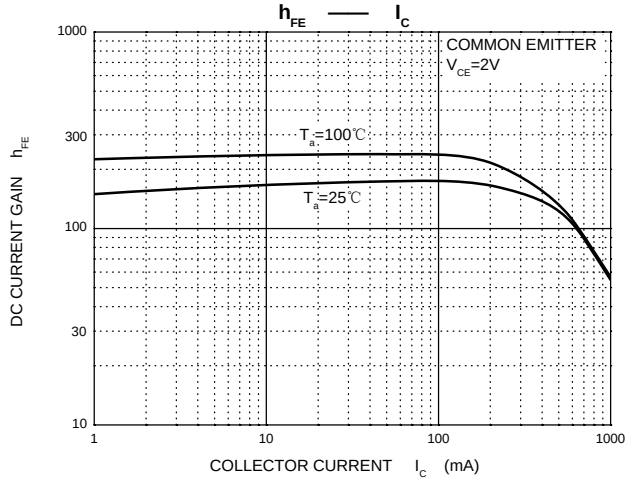
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

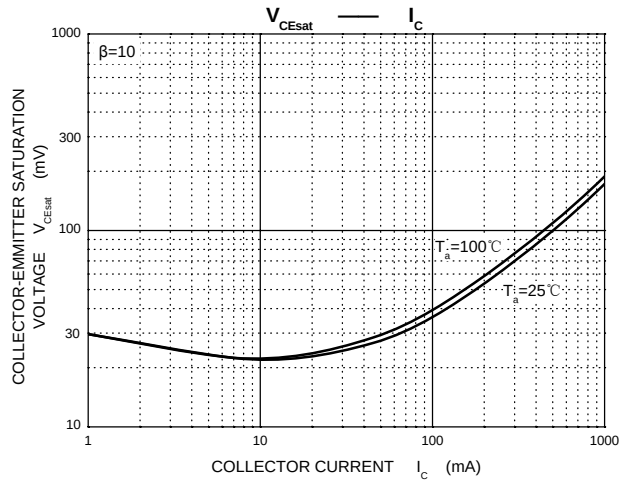
Parameter		Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	**BCP54**	$V_{(BR)CBO}$	I_C= 0.1mA,I_E=0	45		V
	BCP55			60		
	BCP56			100		
Collector-emitter breakdown voltage	**BCP54**	$V_{(BR)CEO}$	I_C= 10mA,I_B=0	45		V
	BCP55			60		
	BCP56			80		
Base-emitter breakdown voltage		$V_{(BR)EBO}$	I_E= 10μA,I_C=0	5		V
Collector cut-off current		I_{CBO}	V_{CB}= 30 V, I_E=0		100	nA
DC current gain		$h_{FE(1)}$	V_{CE}= 2V, I_C=5mA	25		
		$h_{FE(2)}$	V_{CE}= 2V, I_C=150m A	63	250	
		$h_{FE(3)}$	V_{CE}= 2V, I_C=500m A	25		
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=500mA,I_B=50mA		0.5	V
Base-emitter voltage		V_{BE}	V_{CE}=2V, I_C=500m A		1	V
Transition frequency		f_T	V_{CE}=10V,I_C=50mA,f=100MHz	100		MHz

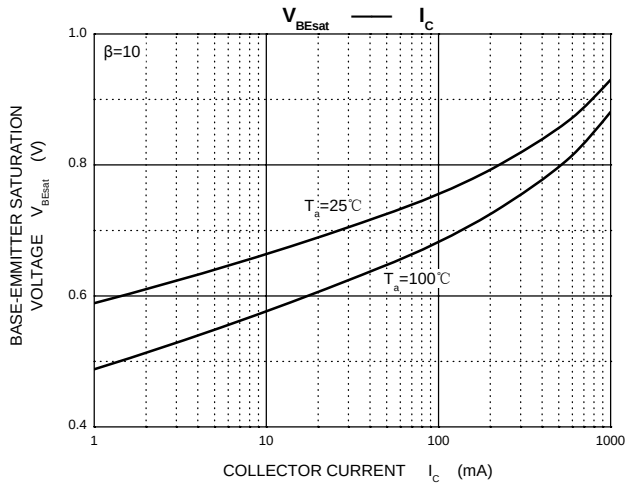
CLASSIFICATION OF $h_{FE(2)}$

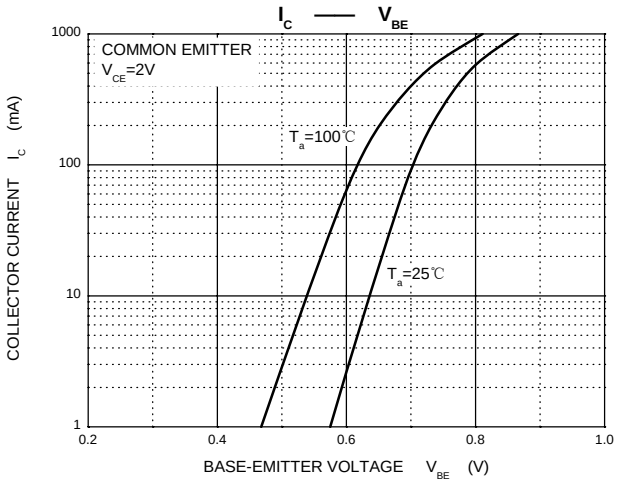
Rank	BCP54-10, BCP55-10, BCP56-10	BCP54-16, BCP55-16, BCP56-16
Range	63-160	100-250
Marking	BCP54-10, BCP55-10, BCP56-10	BCP54-16, BCP55-16, BCP56-16

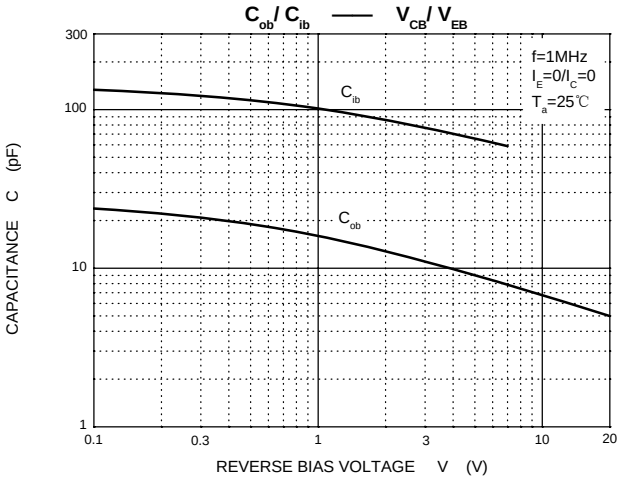

Static Characteristic
COMMON EMITTER
Ta=25℃
1.0mA
0.9mA
0.8mA
0.7mA
0.6mA
0.5mA
0.4mA
0.3mA
0.2mA
IB=0.1mA
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)

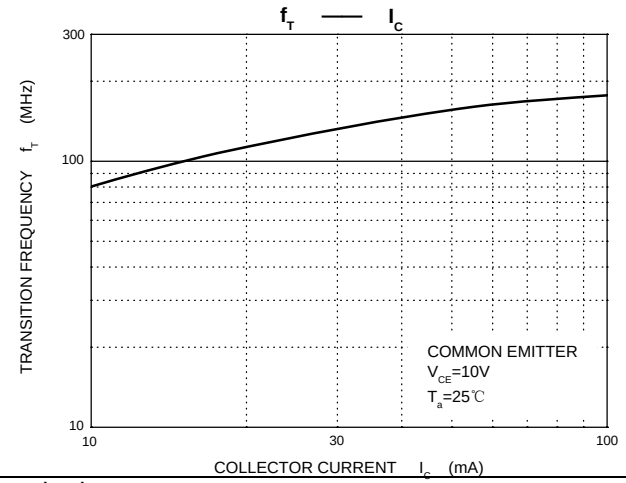

hFE — IC
COMMON EMITTER
VCE=2V
Ta=100℃
Ta=25℃
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)

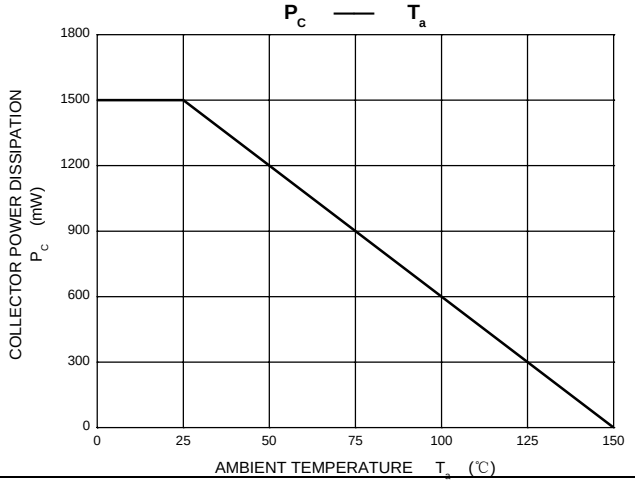

VCEsat — IC
β=10
Ta=100℃
Ta=25℃
COLLECTOR-EMMITTER SATURATION VOLTAGE VCEsat (mV)
COLLECTOR CURRENT IC (mA)

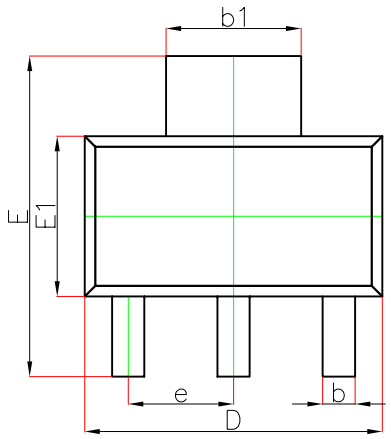

VBEsat — IC
β=10
Ta=25℃
Ta=100℃
BASE-EMMITTER SATURATION VOLTAGE VBEsat (V)
COLLECTOR CURRENT IC (mA)

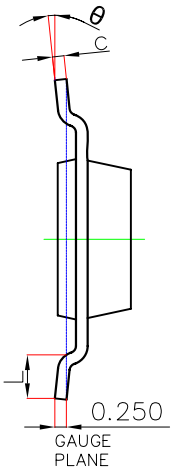

IC — VBE
COMMON EMITTER
VCE=2V
Ta=100℃
Ta=25℃
COLLECTOR CURRENT IC (mA)
BASE-EMITTER VOLTAGE VBE (V)

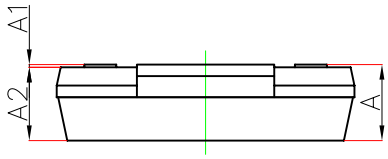

Cob / Cib — VCB / VEB
f=1MHz
IE=0/IC=0
Ta=25℃
Cib
Cob
CAPACITANCE C (pF)
REVERSE BIAS VOLTAGE V (V)


fT — IC
COMMON EMITTER
VCE=10V
Ta=25℃
TRANSITION FREQUENCY fT (MHz)
COLLECTOR CURRENT IC (mA)


PC — Ta
COLLECTOR POWER DISSIPATION PC (mW)
AMBIENT TEMPERATURE Ta (℃)

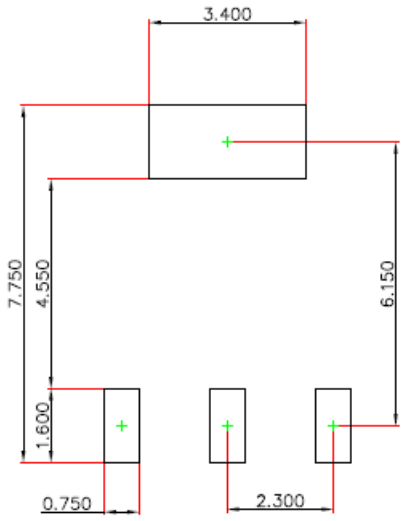






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	——	1.800	——	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	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:±0.050mm.
3.The pad layout is for reference purposes only.