BCP54,55,56 TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-223

FEATURES

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

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
I_{CM}	Peak Pulse Collector Current	2			A
I_B	Base Current-Continuous	100			mA
I_{BM}	Peak Pulse Base Current	200			mA
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

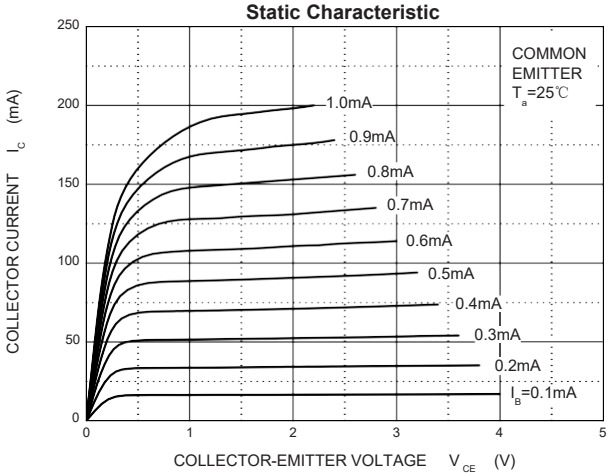
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

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

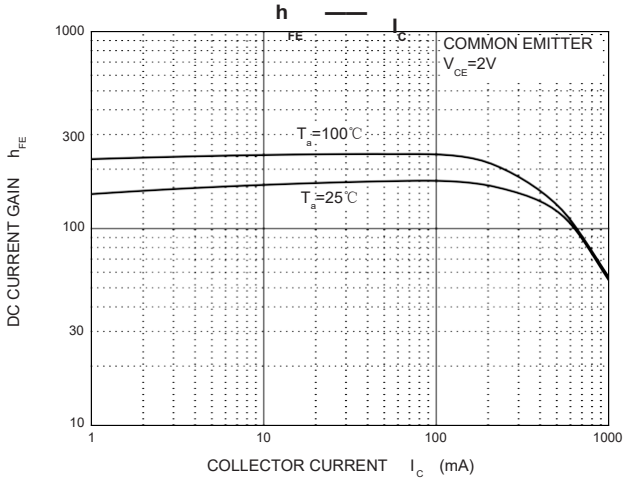
CLASSIFICATION OF $h_{FE(2)}$

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

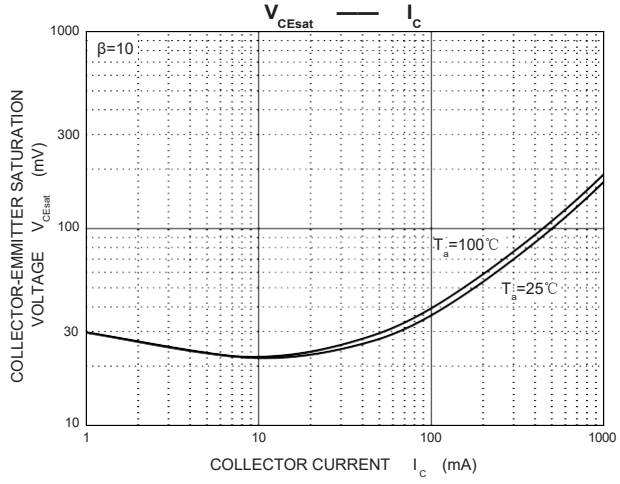
Static Characteristic



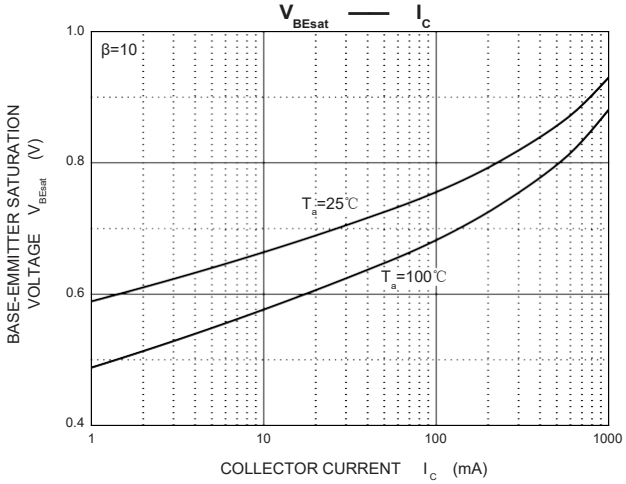
h_{FE} — I_C



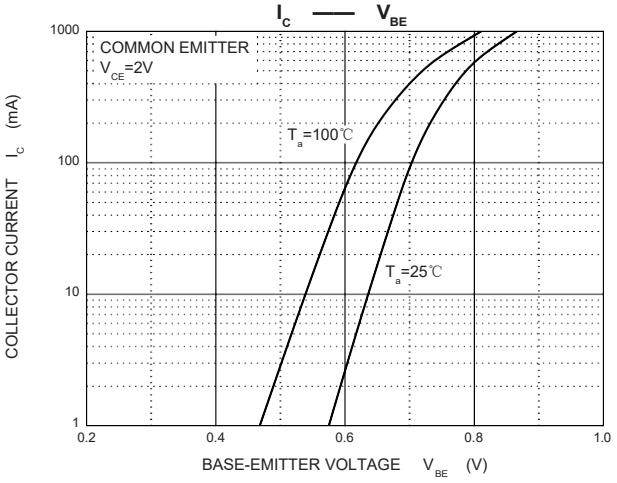
V_{CEsat} — I_C



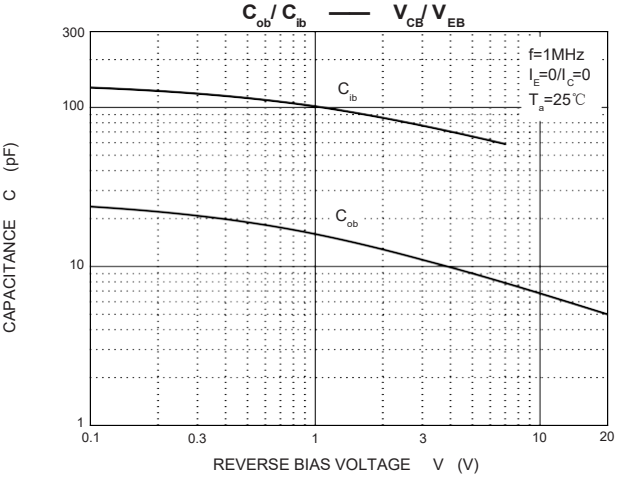
V_{BEsat} — I_C



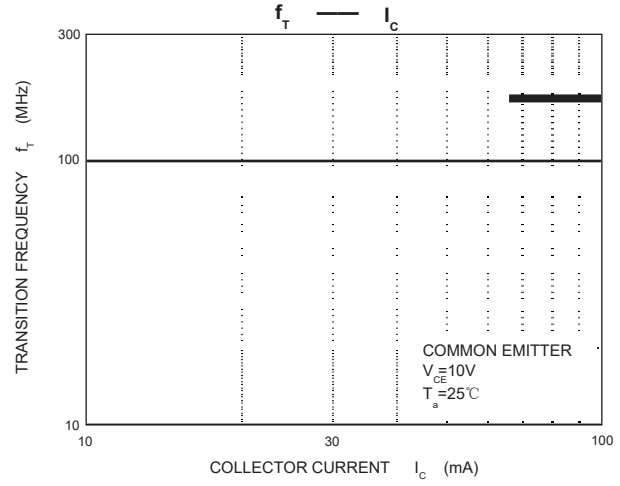
I_C — V_{BE}



C_{ob} / C_{ib} — V_{CB} / V_{EB}



f_T — I_C



P_C — T_a