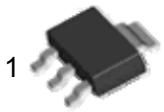
BCP54,55,56 TRANSISTOR (NPN)

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

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	Units
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
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	94			℃/W
T_{stg}	Storage Temperature Range	-65to+150			℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

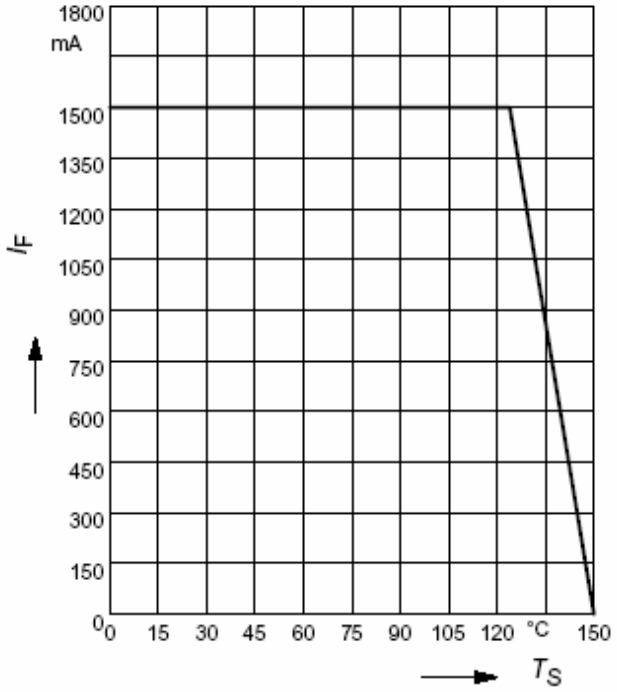
Parameter		Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	**BCP54**	$V_{(BR)CBO}$	I_C= 0.1mA,I_E=0	45		V
	BCP55			60		
	BCP56			100		
Collector-emitter breakdown voltage	**BCP54**	$V_{(BR)CEO}$	I_C= 10mA,I_B=0	45		V
	BCP55			60		
	BCP56			80		
Base-emitter breakdown voltage		$V_{(BR)EBO}$	I_C= 10μA,I_E=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

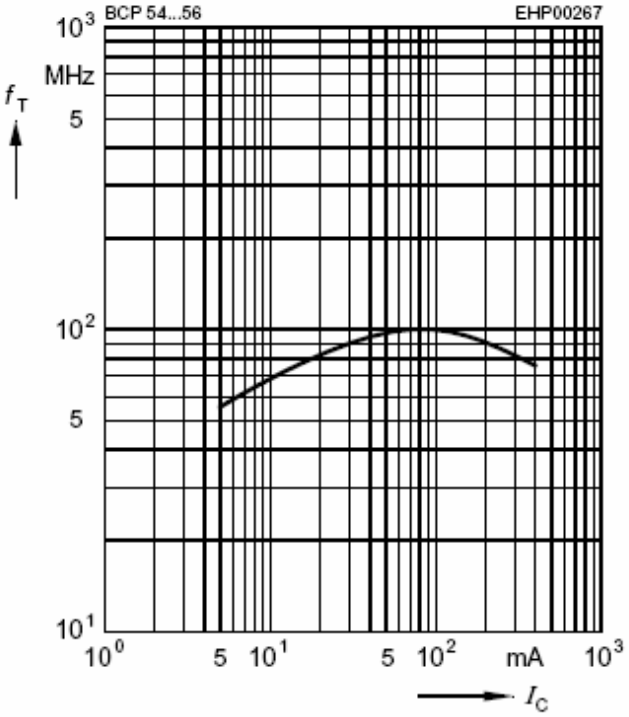
Typical Characteristics

Total power dissipation $P_{tot} = f(T_S)$



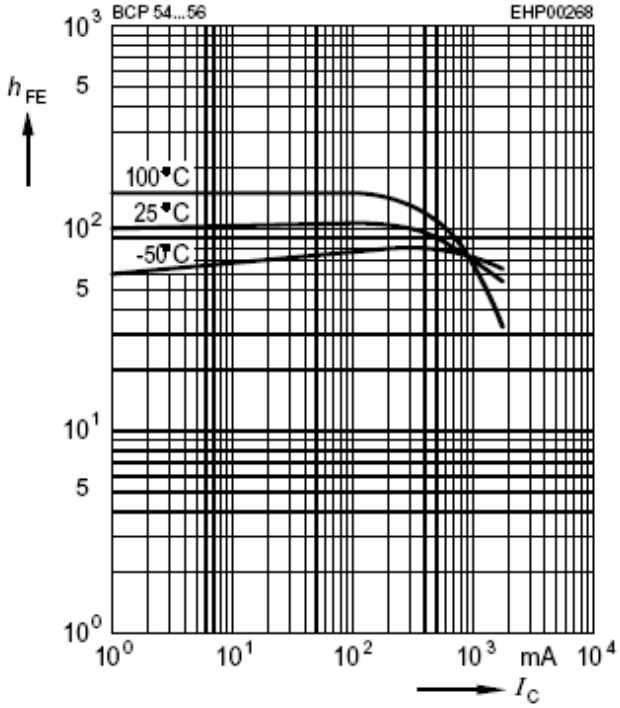
Transition frequency $f_T = f(I_C)$

V_{CE} = 10V



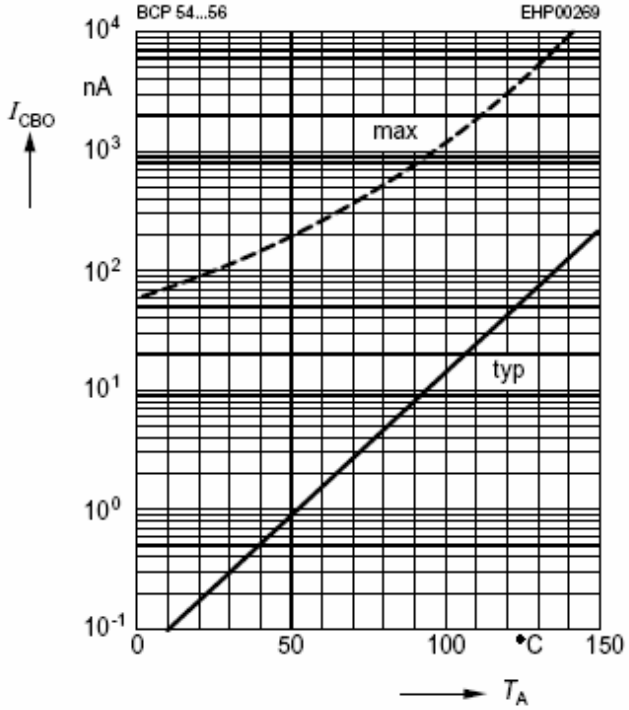
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 2V



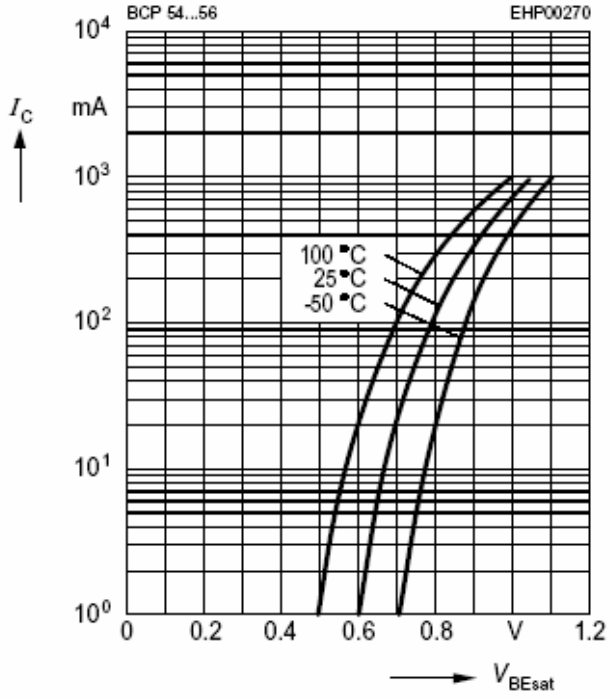
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CB} = 30V



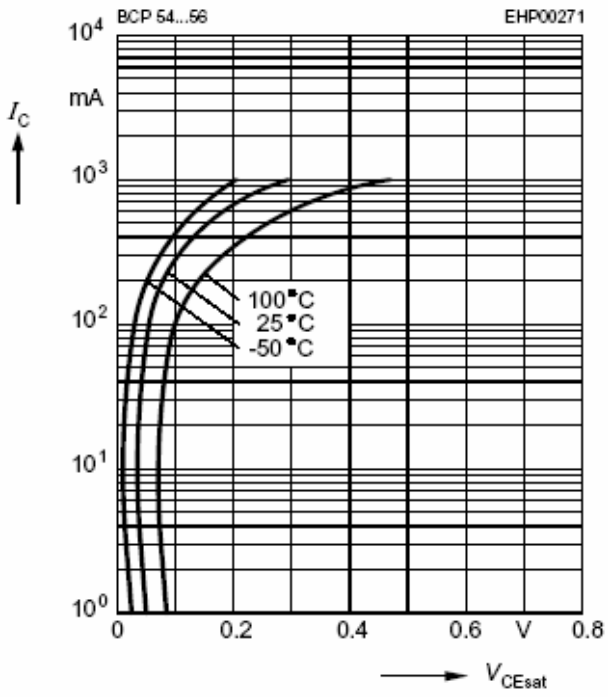
Base-emitter saturation voltage

$I_C = f(V_{BEsat})$, $h_{FE} = 10$



Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, $h_{FE} = 10$



Permissible pulse load

$P_{totmax} / P_{totDC} = f(t_p)$

