

FEATURES

For AF driver and output stages

High collector current

Low collector-emitter saturation voltage

Complementary types: BCP51...BCP53 (PNP)

BCP54/55/56(NPN)



1. BASE
2. COLLECTOR
3. EMITTER

SOT-223

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

Parameter	Symbol	BCP54	BCP55	BCP56	Unit
Collector-Base Voltage	V_{CBO}	45	60	100	V
Collector-Emitter Voltage	V_{CEO}	45	60	80	V
Emitter-Base Voltage	V_{EBO}	5			V
Collector Current -Continuous	I_C	1000			mA
Collector Power Dissipation	I_C	1.5			W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	94			°C/W
Storage Temperature	T_{stg}	-55 to +150			°C

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

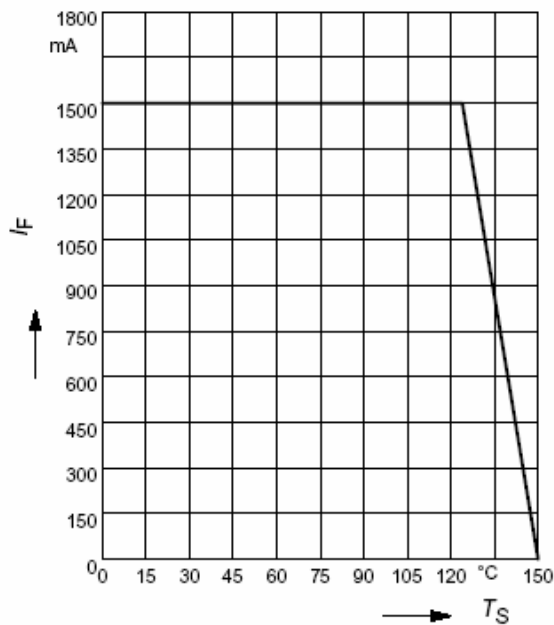
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage BCP54 BCP55 BCP56	V_{CBO}	$I_C = 0.1mA, I_E = 0$	45 60 100		V
Collector-emitter breakdown voltage BCP54 BCP55 BCP56	V_{CEO}	$I_C = 10mA, I_B = 0$	45 60 80		V
Base-emitter breakdown voltage	V_{EBO}	$I_C = 10\mu A, I_E = 0$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

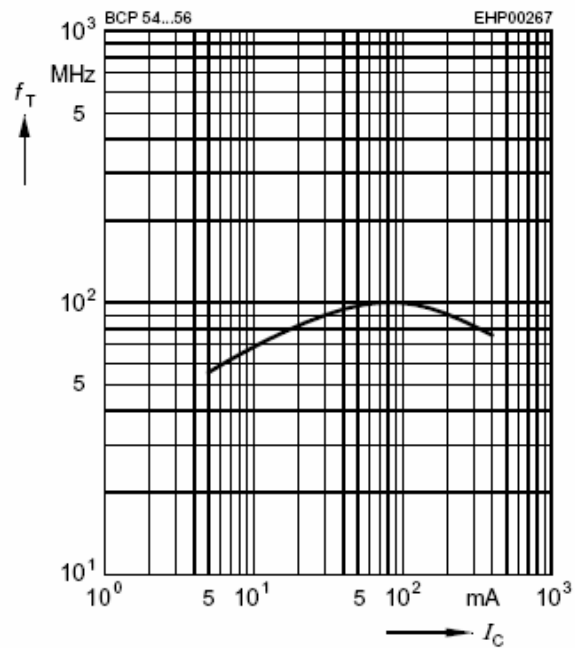
BCP54/55/56 Typical Characteristics

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



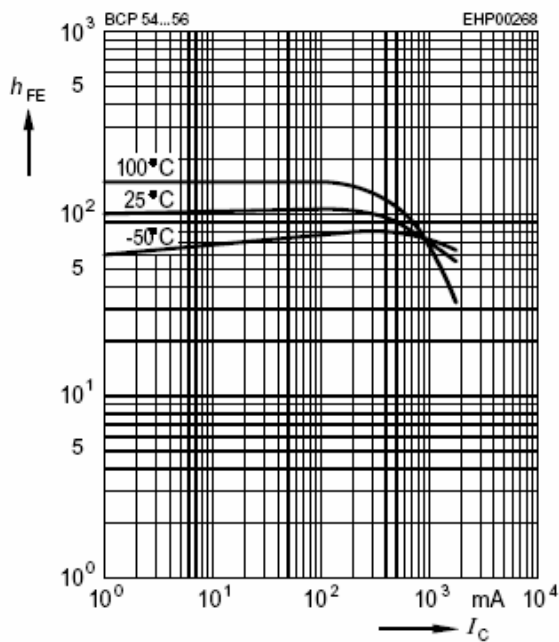
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10V$



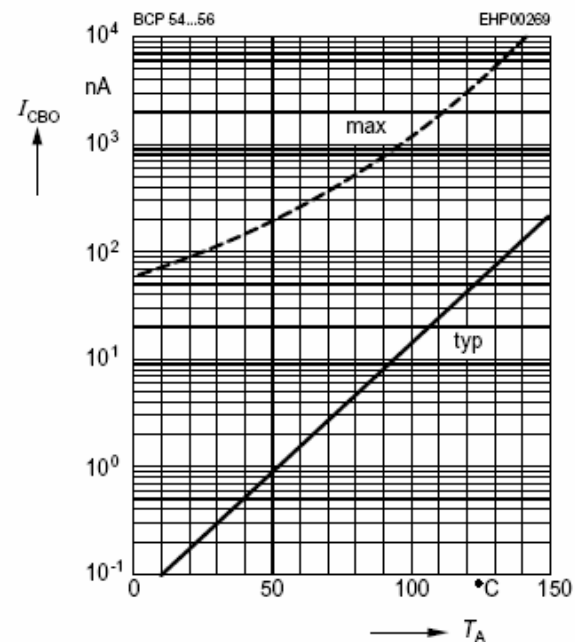
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 2V$



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

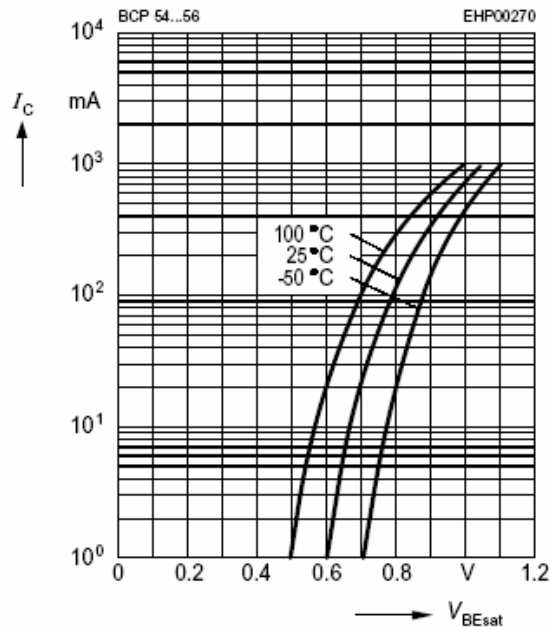
$V_{CB} = 30V$



BCP54/55/56 Typical Characteristics

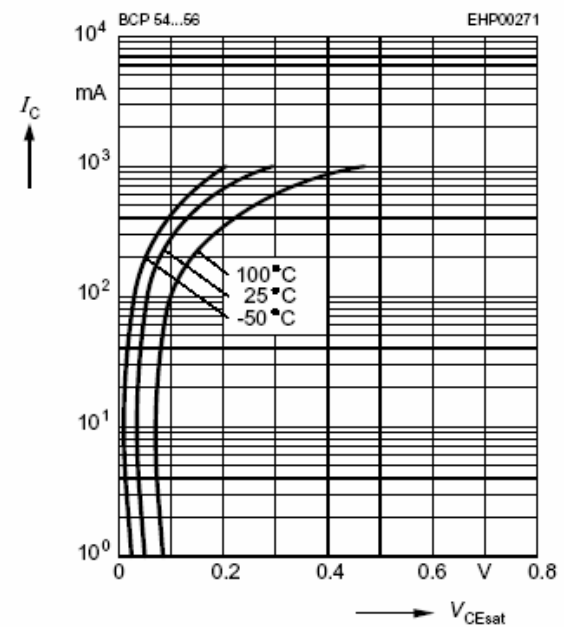
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



Permissible pulse load

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

