

TRANSISTOR (PNP)

FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCP54...BCP56 (NPN)

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	BCP51	BCP52	BCP53	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			$^\circ\text{C}/\text{W}$
T_{stg}	Storage Temperature Range	-65to+150			$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

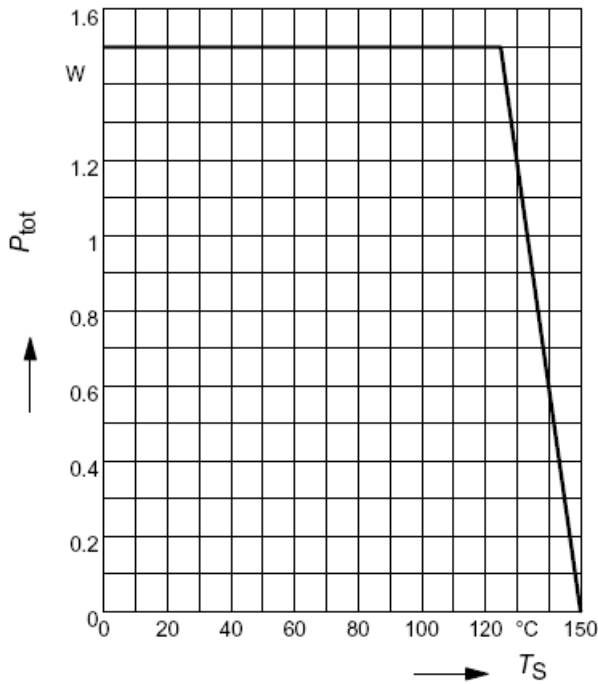
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -0.1\text{mA}, I_E = 0$	BCP51	-45	V
			BCP52	-60	
			BCP53	-100	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	BCP51	-45	V
			BCP52	-60	
			BCP53	-80	
Base-emitter breakdown voltage	$V_{(BR)EBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0$		-100	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -2\text{V}, I_C = -5\text{mA}$	25		
	$h_{FE(2)}$	$V_{CE} = -2\text{V}, I_C = -150\text{mA}$	63	250	
	$h_{FE(3)}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-0.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$		-1	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	100		MHz

CLASSIFICATION OF $h_{FE(2)}$

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

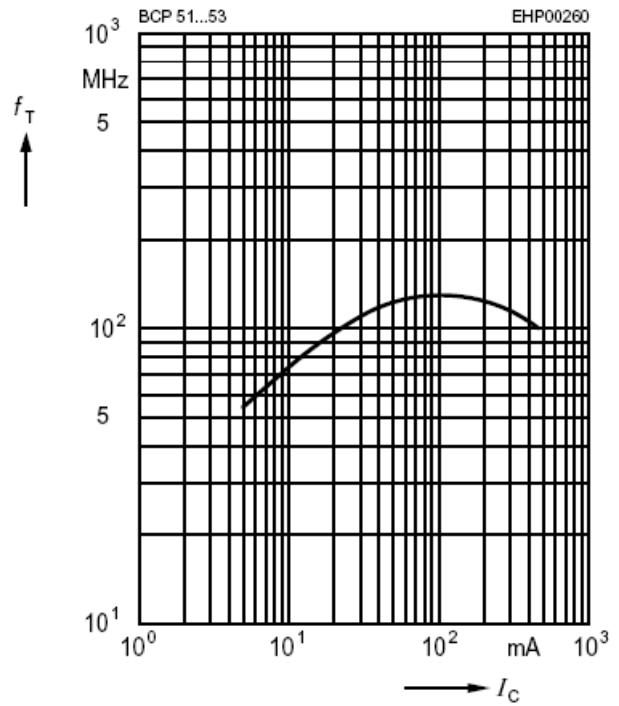
Typical Characteristics

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



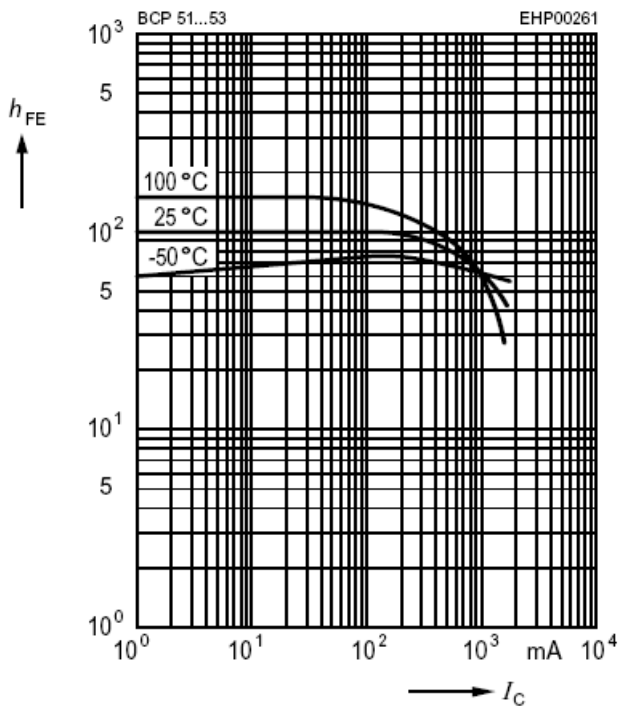
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10V$



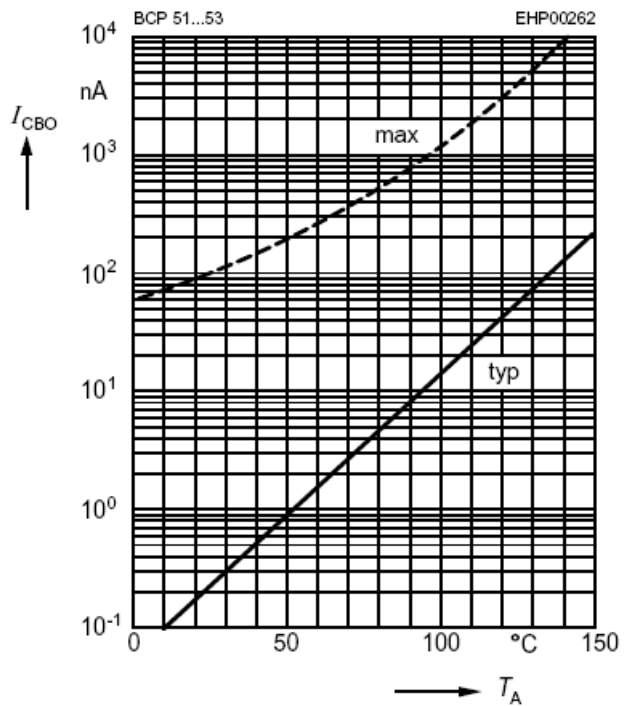
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 2V$



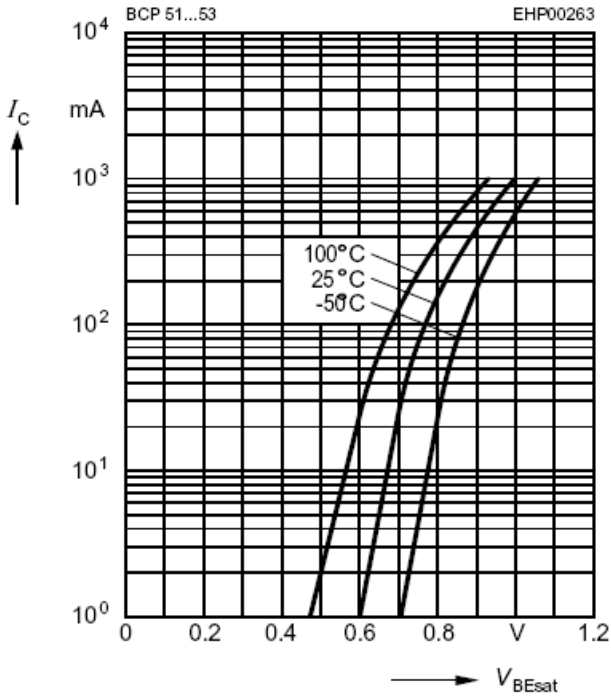
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = 30V$



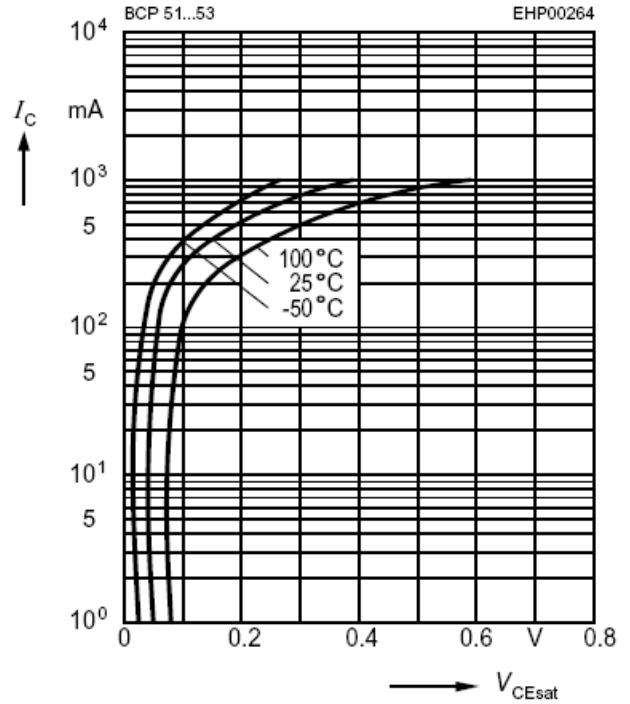
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



Permissible pulse load

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

