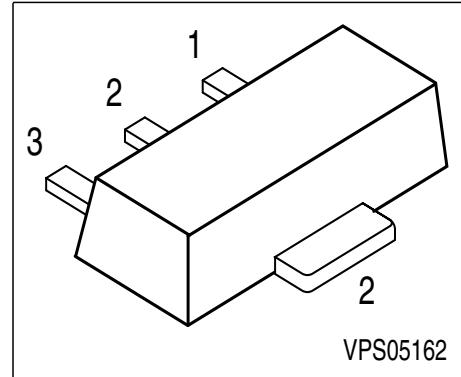


PNP Silicon AF Transistors

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCX 54 ... BCX 56 (NPN)



Type	Marking	Pin Configuration			Package
BCX 51	AA	1 = B	2 = C	3 = E	SOT-89
BCX 51-10	AC	1 = B	2 = C	3 = E	SOT-89
BCX 51-16	AD	1 = B	2 = C	3 = E	SOT-89
BCX 52	AE	1 = B	2 = C	3 = E	SOT-89
BCX 52-10	AG	1 = B	2 = C	3 = E	SOT-89
BCX 52-16	AM	1 = B	2 = C	3 = E	SOT-89
BCX 53	AH	1 = B	2 = C	3 = E	SOT-89
BCX 53-10	AK	1 = B	2 = C	3 = E	SOT-89
BCX 53-16	AL	1 = B	2 = C	3 = E	SOT-89

Maximum Ratings

Parameter	Symbol	BCX 51	BCX 52	BCX 53	Unit
Collector-emitter voltage	V_{CEO}	45	60	80	V
Collector-base voltage	V_{CBO}	45	60	100	
Emitter-base voltage	V_{EBO}	5	5	5	
DC collector current	I_C		1		A
Peak collector current	I_{CM}		1.5		
Base current	I_B		100		mA
Peak base current	I_{BM}		200		
Total power dissipation, $T_S = 130 \text{ }^\circ\text{C}$	P_{tot}		1		W
Junction temperature	T_j		150		$^\circ\text{C}$
Storage temperature	T_{stg}		-65 ... 150		

Thermal Resistance

Junction ambient 1)	R_{thJA}	≤ 75	K/W
Junction - soldering point	R_{thJS}	≤ 20	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm² Cu

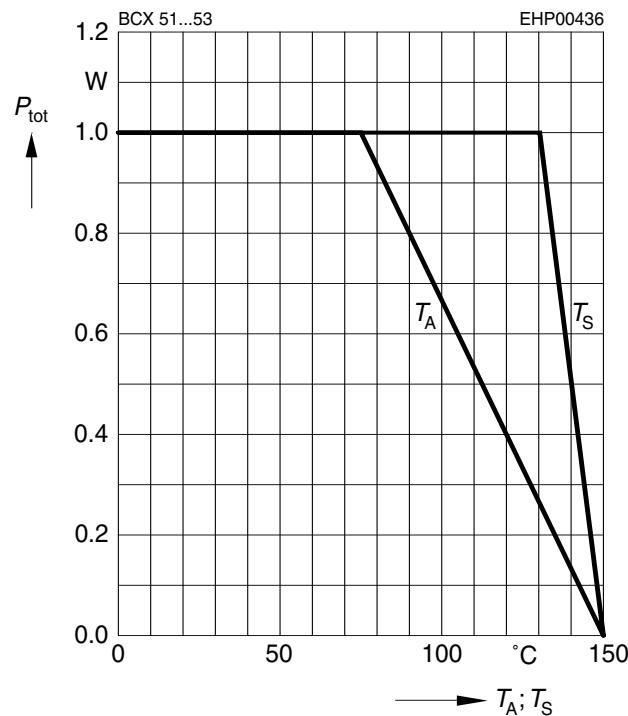
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 10 \text{ mA}, I_B = 0$	$V_{(\text{BR})\text{CEO}}$	45	-	-	V
		60	-	-	
		80	-	-	
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(\text{BR})\text{CBO}}$	45	-	-	
		60	-	-	
		100	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(\text{BR})\text{EBO}}$	5	-	-	
		-	-	-	
Collector cutoff current $V_{CB} = 30 \text{ V}, I_E = 0$	I_{CBO}	-	-	100	nA
Collector cutoff current $V_{CB} = 30 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	I_{CBO}	-	-	20	μA
DC current gain 1) $I_C = 5 \text{ mA}, V_{CE} = 2 \text{ V}$	h_{FE}	25	-	-	-
		-	-	-	
		-	-	-	
DC current gain 1) $I_C = 150 \text{ mA}, V_{CE} = 2 \text{ V}$	h_{FE}	40	-	250	-
		63	100	160	
		100	160	250	
DC current gain 1) $I_C = 500 \text{ mA}, V_{CE} = 2 \text{ V}$	h_{FE}	25	-	-	
		-	-	-	
Collector-emitter saturation voltage1) $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	V_{CEsat}	-	-	0.5	V
Base-emitter voltage 1) $I_C = 500 \text{ mA}, V_{CE} = 2 \text{ V}$	$V_{\text{BE}(\text{ON})}$	-	-	1	
AC Characteristics					
Transition frequency $I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}, f = 20 \text{ MHz}$	f_T	-	125	-	MHz

1) Pulse test: $t \leq 300 \mu\text{s}$, $D = 2\%$

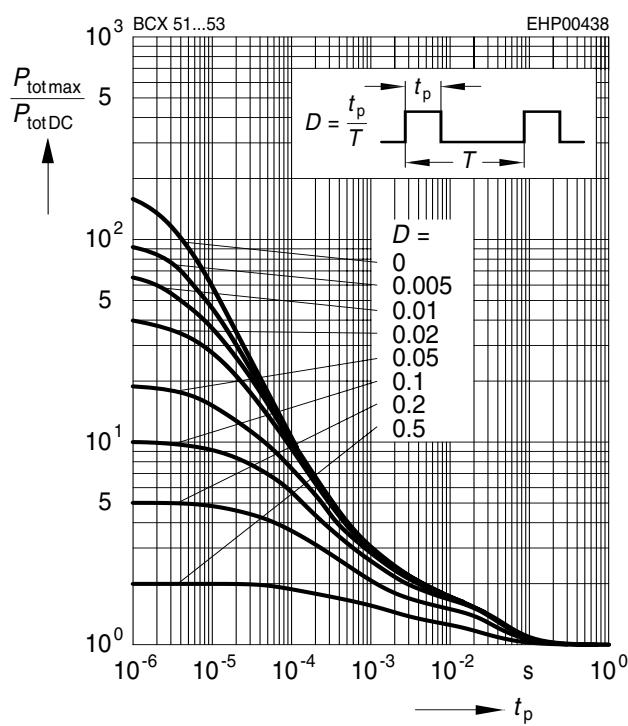
Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$

* Package mounted on epoxy



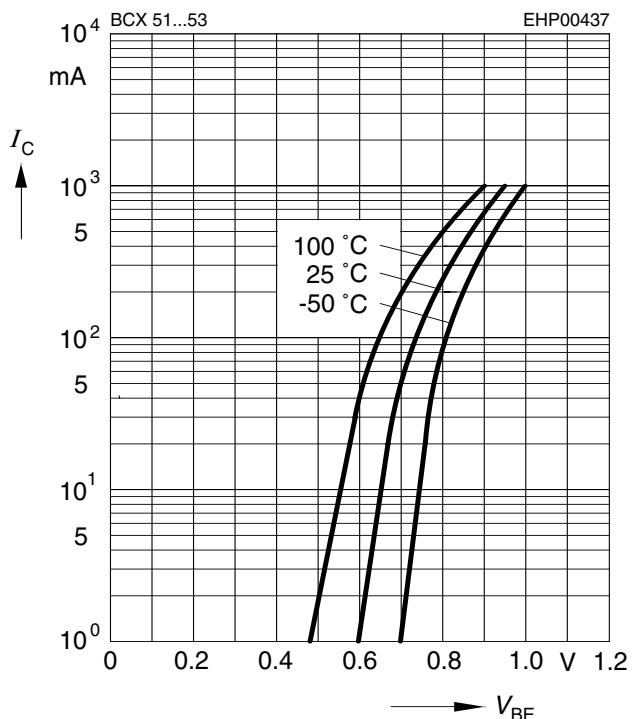
Permissible pulse load

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



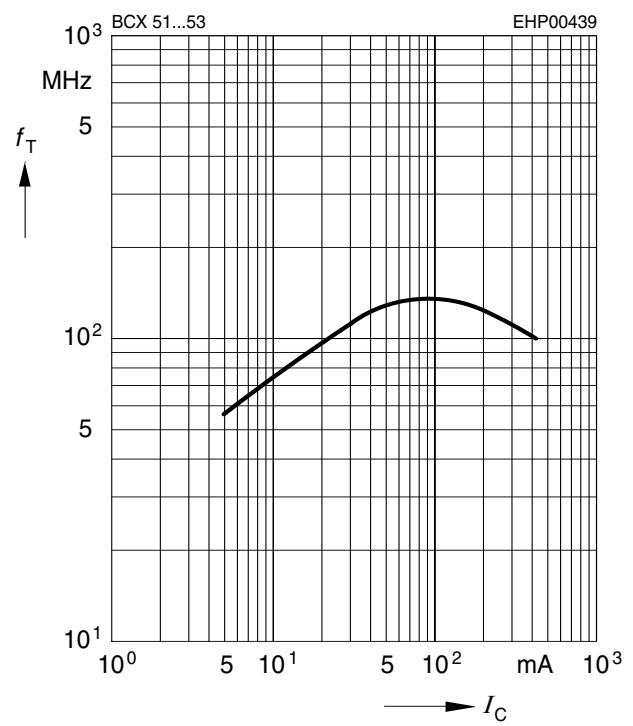
Collector current $I_C = f(V_{BE})$

$V_{CE} = 2V$



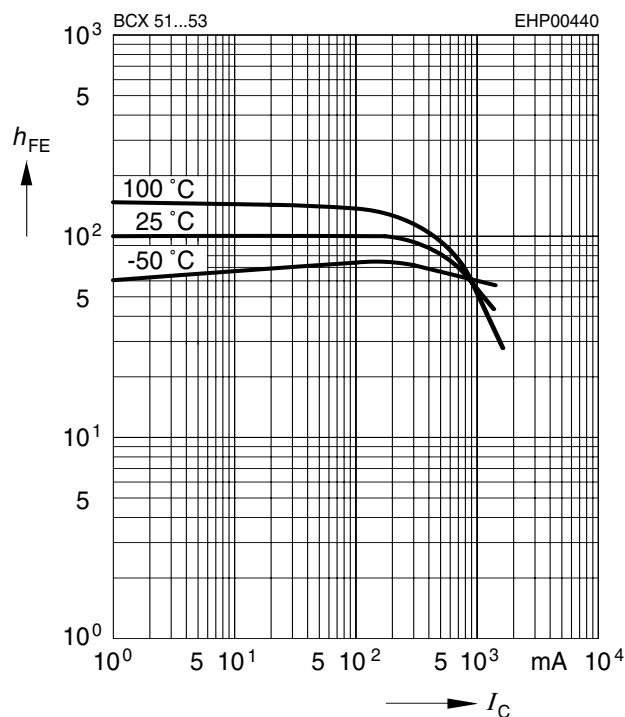
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10V$



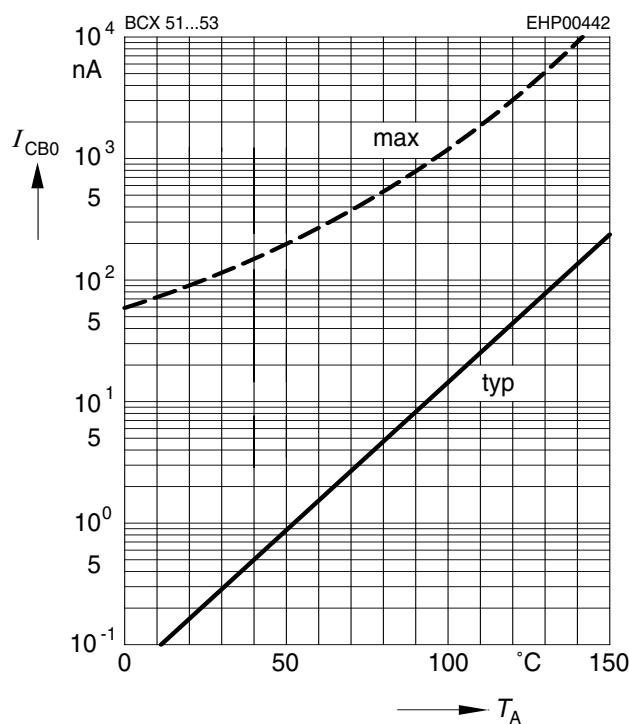
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 2V$



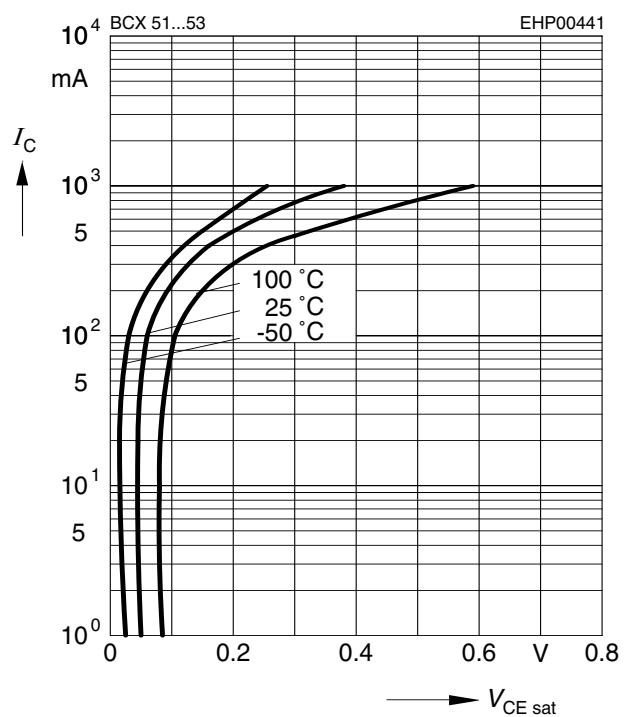
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = 30V$



Collector-emitter saturation voltage

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



Base-emitter saturation voltage

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

