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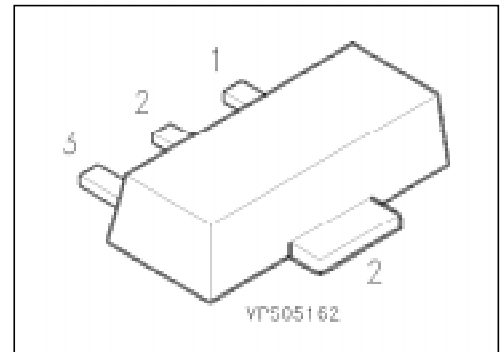**PNP Silicon AF Transistors**   **BCX 51 ... BCX 53**

Features

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

Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1]
BCX 51	AA	Q62702-C1847	B	C	E	SOT-89
BCX 51-10	AC	Q62702-C1831				
BCX 51-16	AD	Q62702-C1857				
BCX 52	AE	Q62702-C1743				
BCX 52-10	AG	Q62702-C1744				
BCX 52-16	AM	Q62702-C1900				
BCX 53	AH	Q62702-C905				
BCX 53-10	AK	Q62702-C1753				
BCX 53-16	AL	Q62702-C1502				

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[1] For detailed information see chapter Package Outlines.

Maximum Ratings

Parameter	Symbol	Values			Unit
		BCX 51	**BCX 52**	**BCX 53**	
Collector-emitter voltage	V_{CE0}	45	60	80	V
Collector-base voltage	V_{CB0}	45	60	100	
Emitter-base voltage	V_{EB0}	5	5	5	
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, $T_S = 130\ ^\circ C$	P_{tot}	1			W
Junction temperature	T_j	150			$^\circ$C
Storage temperature range	T_{stg}	$-65 \ldots + 150$			

Thermal Resistance

Parameter	Symbol	Values	Unit
Junction - ambient[1]	$R_{th\ JA}$	≤ 75	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 20	

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[1] Package mounted on epoxy pcb 40 mm $\times$ 40 mm $\times$ 1.5 mm/6 cm^2 Cu.

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Electrical Characteristics

at $T_A = 25\,°C$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics

Parameter	Symbol	min.	typ.	max.	Unit
Collector-emitter breakdown voltage $I_C = 10$ mA	$V_{(BR)CE0}$				V
BCX 51		45	–	–	
BCX 52		60	–	–	
BCX 53		80	–	–	
Collector-base breakdown voltage $I_C = 100\,\mu A$	$V_{(BR)CB0}$				
BCX 51		45	–	–	
BCX 52		60	–	–	
BCX 53		100	–	–	
Emitter-base breakdown voltage $I_E = 10\,\mu A$	$V_{(BR)EB0}$	5	–	–	
Collector cutoff current $V_{CB} = 30$ V $V_{CB} = 30$ V, $T_A = 150\,°C$	I_{CB0}	– –	– –	100 20	nA μA
Emitter cutoff current $V_{EB} = 4$ V	I_{EB0}	–	–	20	nA
DC current gain[1] $I_C = \;\;5$ mA, $V_{CE} = 2$ V $I_C = 150$ mA, $V_{CE} = 2$ V	h_{FE}	25	–	–	–
BCX 51, BCX 52, BCX 53		40	–	250	
BCX 51-10, BCX 52-10, BCX 53-10		63	100	160	
BCX 51-16, BCX 52-16, BCX 53-16		100	160	250	
$I_C = 500$ mA, $V_{CE} = 2$ V		25	–	–	
Collector-emitter saturation voltage[1] $I_C = 500$ mA, $I_B = 50$ mA	V_{CEsat}	–	–	0.5	V
Base-emitter voltage[1] $I_C = 500$ mA, $V_{CE} = 2$ V	V_{BE}	–	–	1	

AC characteristics

Parameter	Symbol	min.	typ.	max.	Unit
Transition frequency $I_C = 50$ mA, $V_{CE} = 10$ V, $f = 20$ MHz	f_T	–	125	–	MHz

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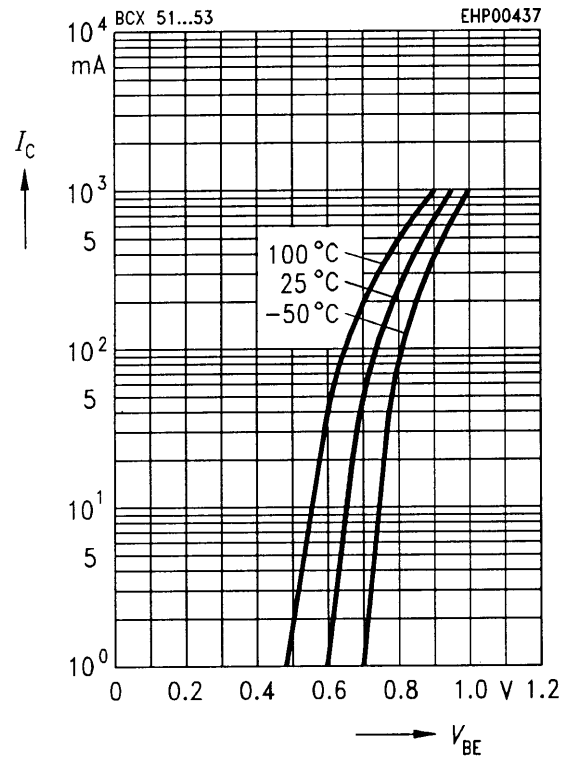
[1] Pulse test: $t \leq 300\,\mu s$, $D = 2\,\%$.

Total power dissipation $P_{tot} = f(T_A*; T_S)$
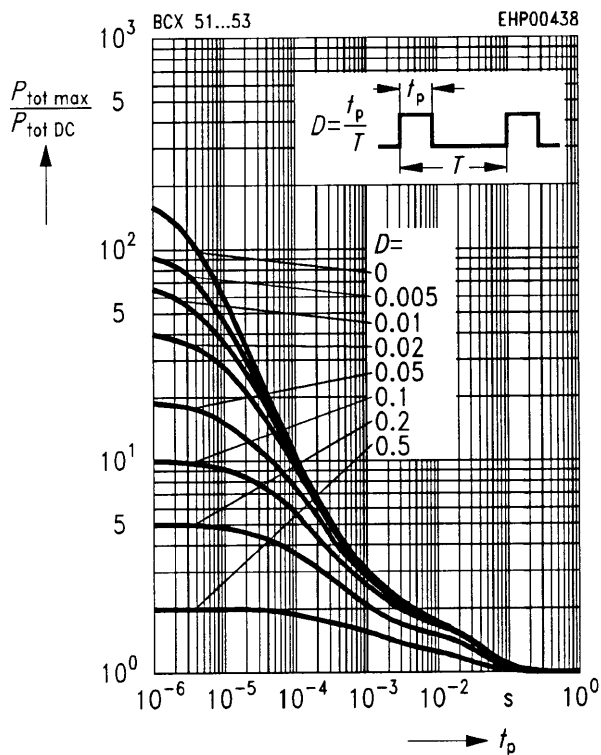*** Package mounted on epoxy**
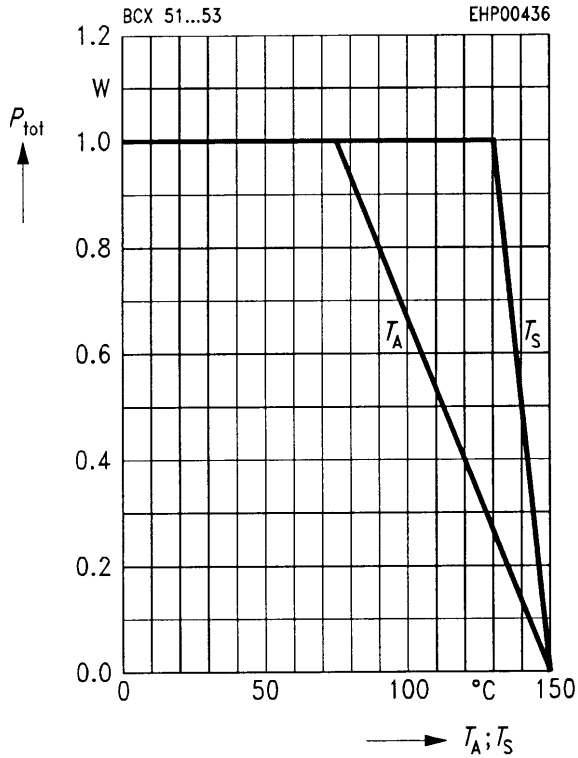
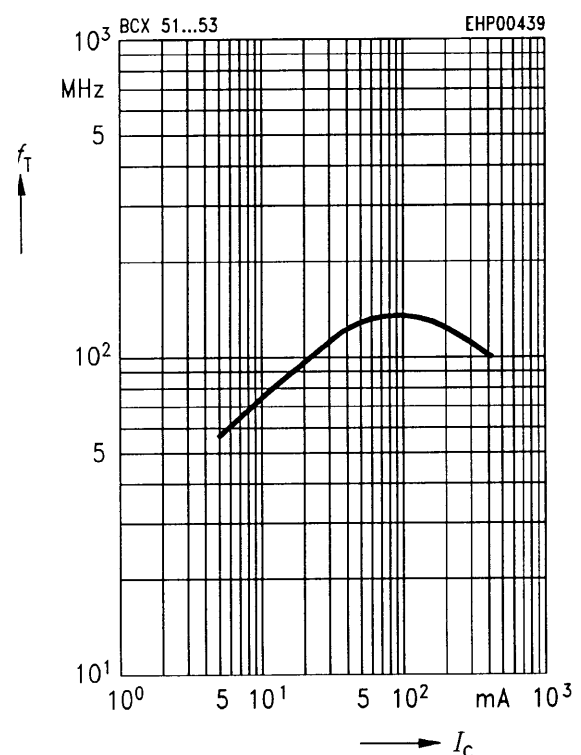**Collector current** $I_C = f(V_{BE})$
$V_{CE} = 2$ V

Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f(t_p)$

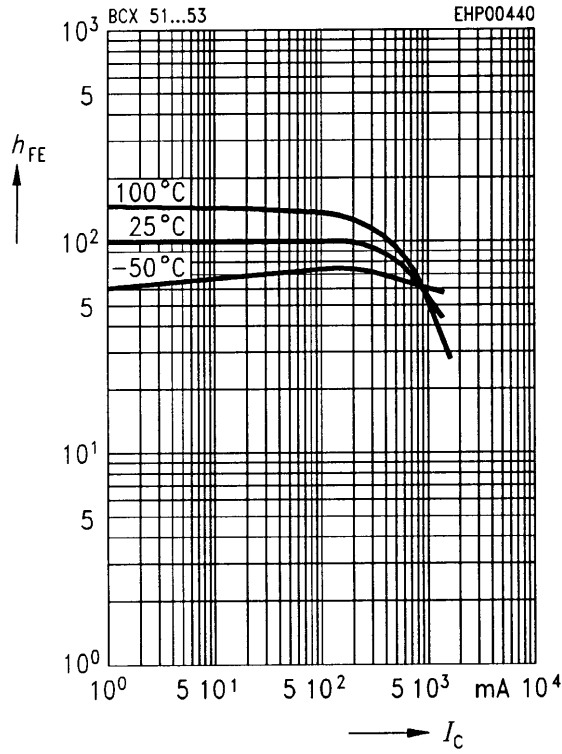**Transition frequency** $f_T = f(I_C)$
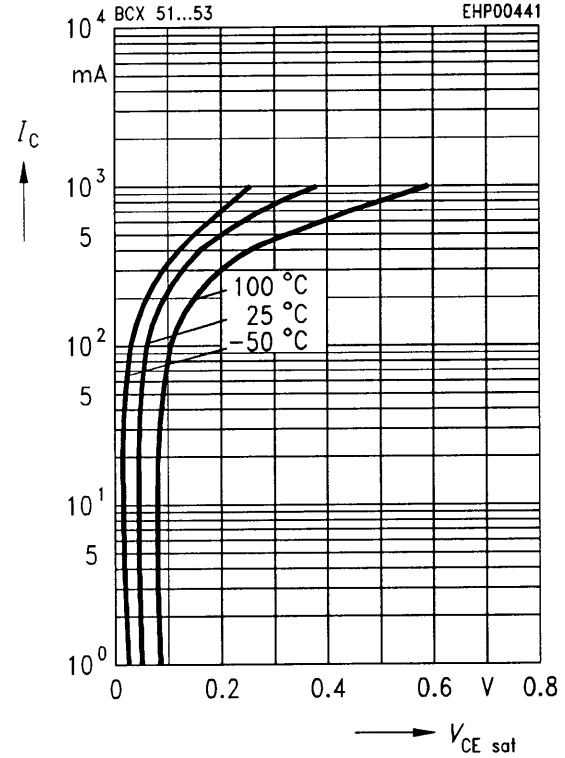$V_{CE} = 10$ V

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

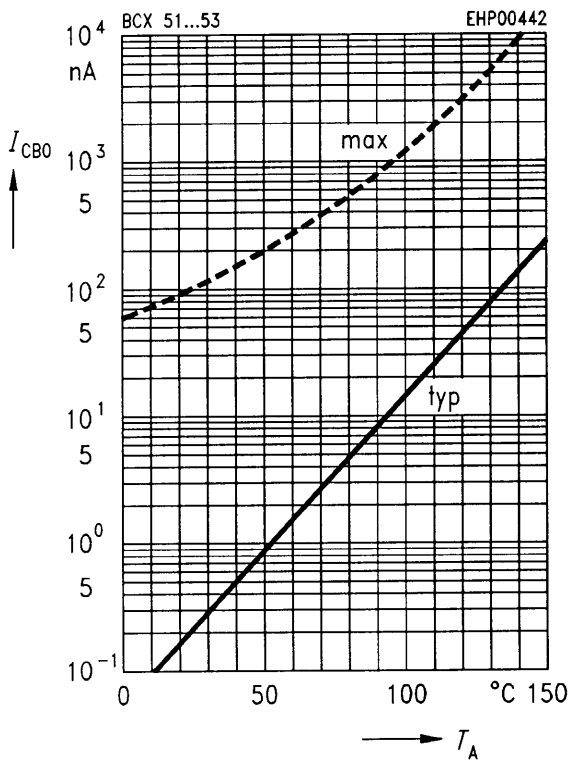$V_{CE} = 2$ V

Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$

$h_{FE} = 10$

Collector cutoff current $I_{CB0} = f(T_A)$

$V_{CB} = 30$ V

Base-emitter saturation voltage

$I_C = f(V_{BEsat})$

$h_{FE} = 10$