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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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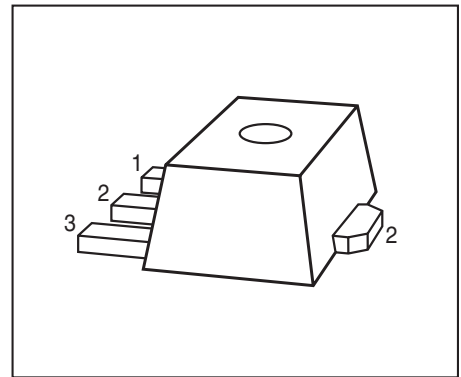
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**PNP Silicon AF Transistors**

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCX54...BCX56 (NPN)
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



Type	Marking	Pin Configuration			Package
		1=B	2=C	3=E	
BCX51	AA	1=B	2=C	3=E	SOT89
BCX51-16	AD	1=B	2=C	3=E	SOT89
BCX52	AE	1=B	2=C	3=E	SOT89
BCX52-16	AM	1=B	2=C	3=E	SOT89
BCX53	AH	1=B	2=C	3=E	SOT89
BCX53-10	AK	1=B	2=C	3=E	SOT89
BCX53-16	AL	1=B	2=C	3=E	SOT89

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CEO}$	45 60 80	V
BCX51			
BCX52			
BCX53			
Collector-base voltage	$V_{CBO}$	45 60 100	
BCX51			
BCX52			
BCX53			
Emitter-base voltage	$V_{EBO}$	5	
Collector current	$I_C$	1	A
Peak collector current, $t_p \leq 10$ ms	$I_{CM}$	1.5	
Base current	$I_B$	100	mA
Peak base current	$I_{BM}$	200	
Total power dissipation $T_S \leq 120$ °C	$P_{tot}$	2	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	$\leq 15$	K/W

<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note AN077 (Thermal Resistance Calculation)

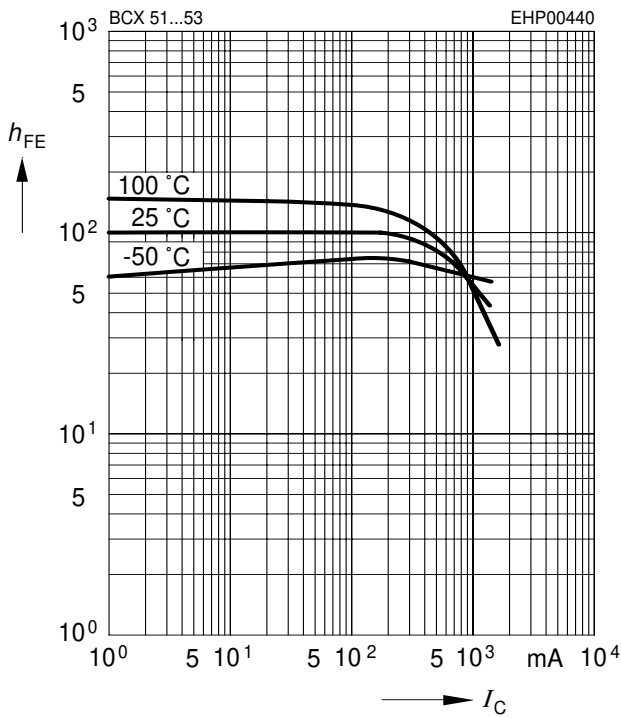
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 10\text{ mA}$ , $I_B = 0$ , BCX51	$V_{(BR)CEO}$	45	-	-	V
$I_C = 10\text{ mA}$ , $I_B = 0$ , BCX52		60	-	-	
$I_C = 10\text{ mA}$ , $I_B = 0$ , BCX53		80	-	-	
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}$ , $I_E = 0$ , BCX51	$V_{(BR)CBO}$	45	-	-	
$I_C = 100\text{ }\mu\text{A}$ , $I_E = 0$ , BCX52		60	-	-	
$I_C = 100\text{ }\mu\text{A}$ , $I_E = 0$ , BCX53		100	-	-	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$ , $I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector-base cutoff current $V_{CB} = 30\text{ V}$ , $I_E = 0$ $V_{CB} = 30\text{ V}$ , $I_E = 0$ , $T_A = 150\text{ }^\circ\text{C}$	$I_{CBO}$	-	-	0.1 20	$\mu\text{A}$
DC current gain <sup>1)</sup> $I_C = 5\text{ mA}$ , $V_{CE} = 2\text{ V}$ $I_C = 150\text{ mA}$ , $V_{CE} = 2\text{ V}$ , BCX51...BCX53 $I_C = 150\text{ mA}$ , $V_{CE} = 2\text{ V}$ , BCX53-10 $I_C = 150\text{ mA}$ , $V_{CE} = 2\text{ V}$ , BCX51-16...BCX53-16 $I_C = 500\text{ mA}$ , $V_{CE} = 2\text{ V}$	$h_{FE}$	25 40 63 100 25	- - 100 160 -	- 250 160 250 -	-
Collector-emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CEsat}$	-	-	0.5	V
Base-emitter voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $V_{CE} = 2\text{ V}$	$V_{BE(ON)}$	-	-	1	
<b>AC Characteristics</b>					
Transition frequency $I_C = 50\text{ mA}$ , $V_{CE} = 10\text{ V}$ , $f = 20\text{ MHz}$	$f_T$	-	125	-	MHz

<sup>1</sup>Pulse test:  $t < 300\mu\text{s}$ ;  $D < 2\%$

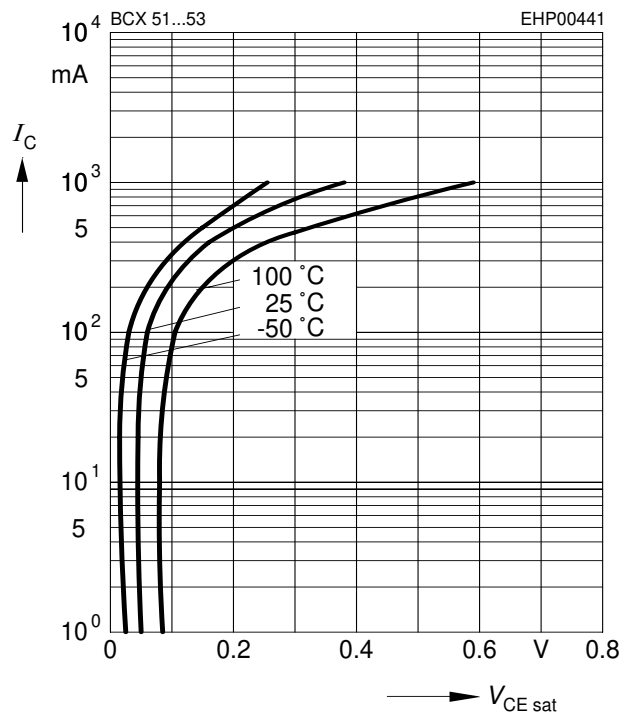
**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 2\text{ V}$



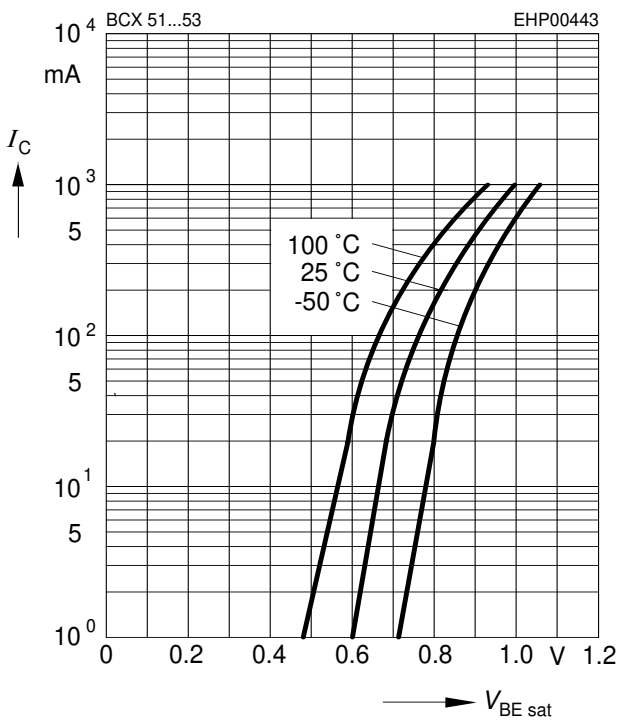
**Collector-emitter saturation voltage**

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



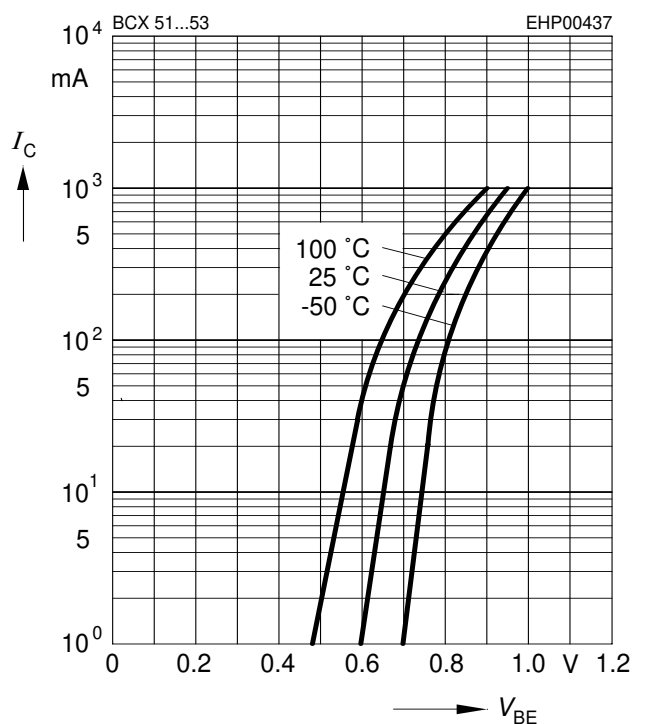
**Base-emitter saturation voltage**

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



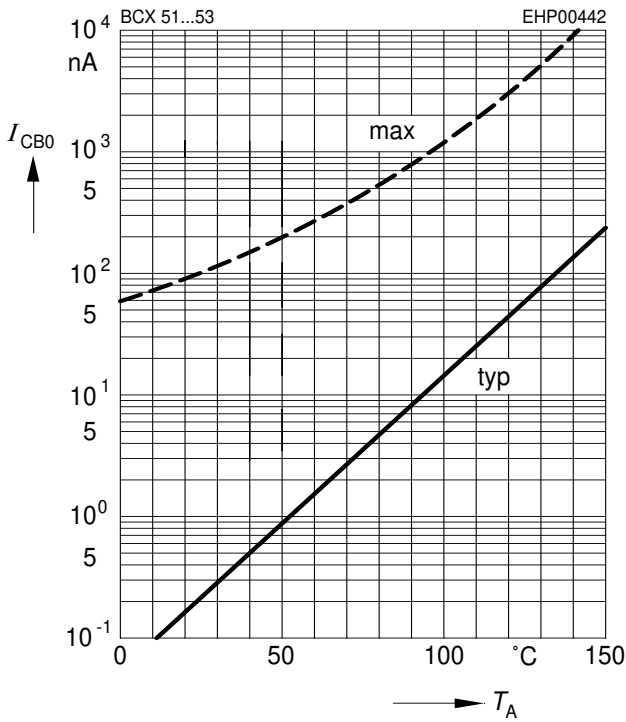
**Collector current  $I_C = f(V_{BE})$**

$V_{CE} = 2\text{ V}$



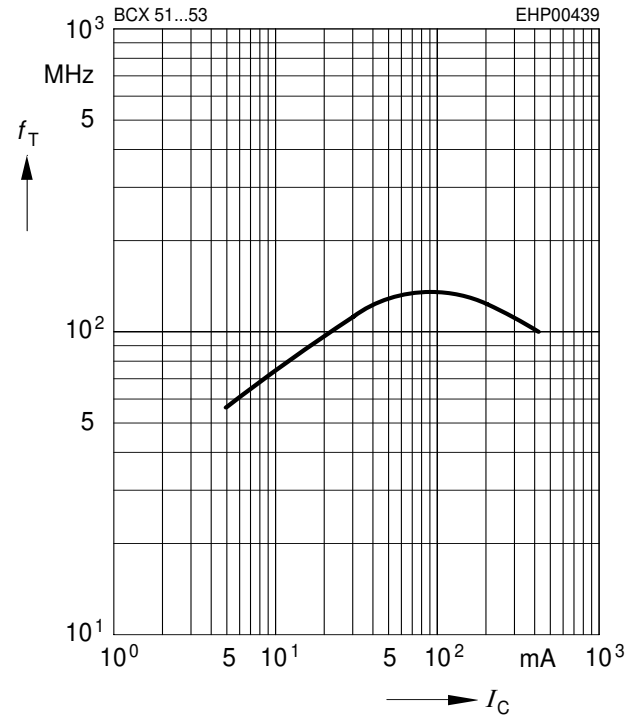
Collector cutoff current  $I_{CBO} = f(T_A)$

$V_{CBO} = 30\text{ V}$

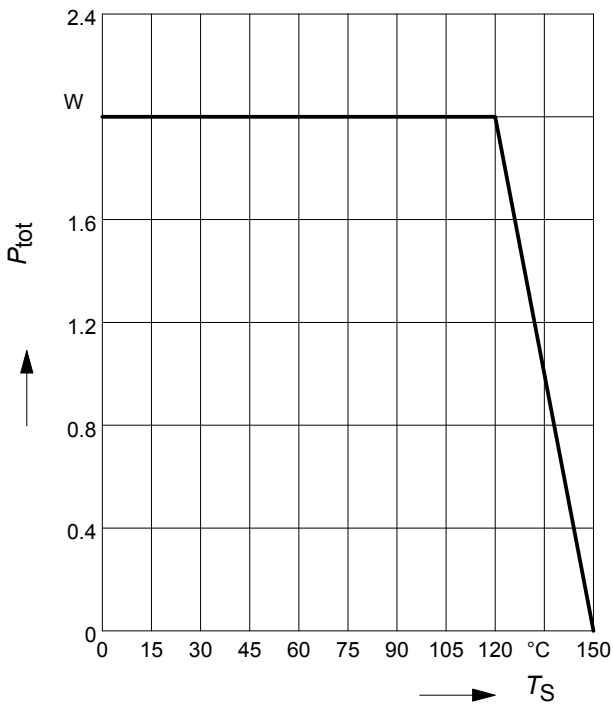


Transition frequency  $f_T = f(I_C)$

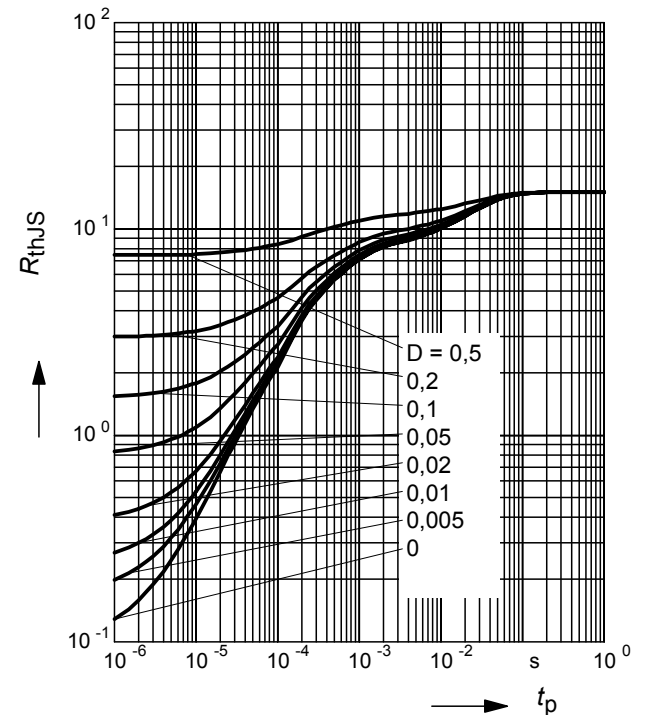
$V_{CE} = 10\text{ V}$



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

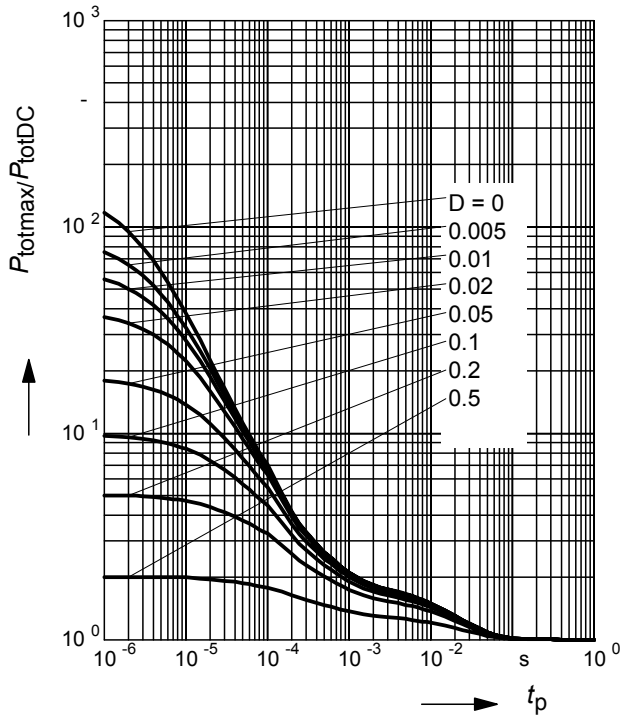


Permissible Pulse Load  $R_{thJS} = f(t_p)$

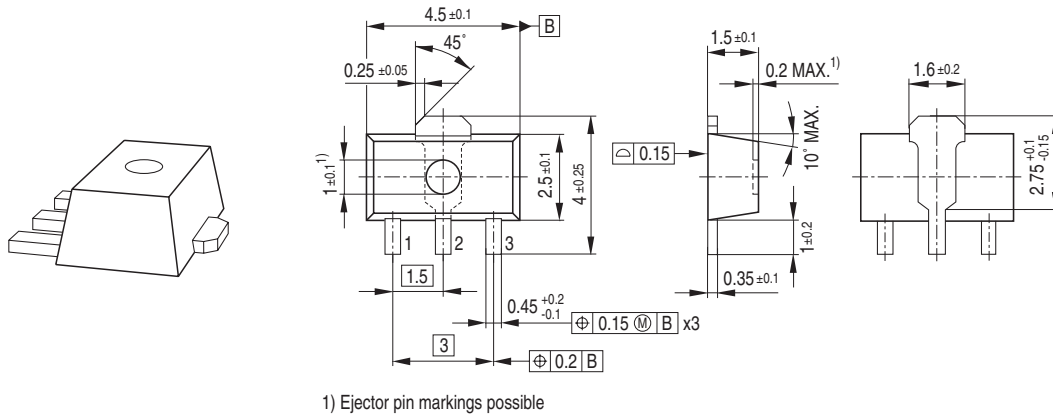


**Permissible Pulse Load**

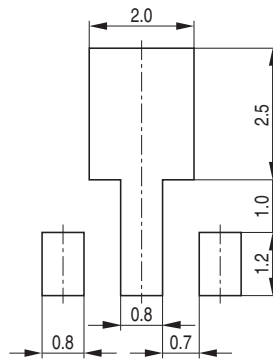
$$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$$



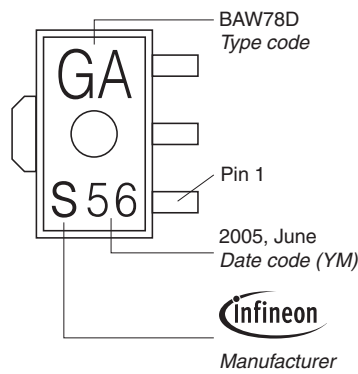
Package Outline



Foot Print

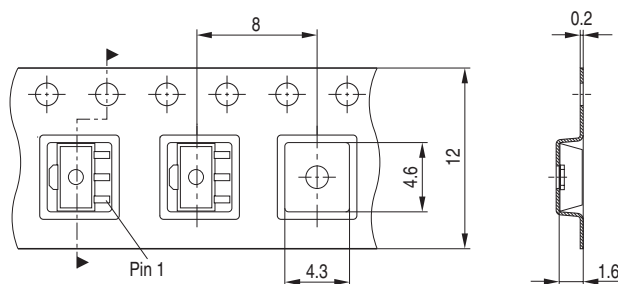


Marking Layout (Example)



Standard Packing

Reel  $\phi$ 180 mm = 1.000 Pieces/Reel  
 Reel  $\phi$ 330 mm = 4.000 Pieces/Reel





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