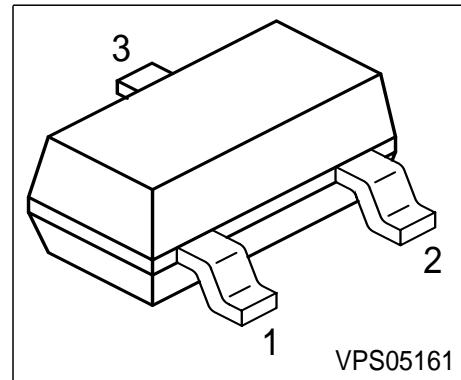


## PNP Silicon AF Transistors

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC817, BC818 (NPN)



Type	Marking	Pin Configuration			Package
BC807-16	5As	1 = B	2 = E	3 = C	SOT23
BC807-25	5Bs	1 = B	2 = E	3 = C	SOT23
BC807-40	5Cs	1 = B	2 = E	3 = C	SOT23
BC808-16	5Es	1 = B	2 = E	3 = C	SOT23
BC808-25	5Fs	1 = B	2 = E	3 = C	SOT23
BC808-40	5Gs	1 = B	2 = E	3 = C	SOT23

## Maximum Ratings

Parameter	Symbol	BC807	BC808	Unit
Collector-emitter voltage	$V_{CEO}$	45	25	V
Collector-base voltage	$V_{CBO}$	50	30	
Emitter-base voltage	$V_{EBO}$	5	5	
DC collector current	$I_C$	500		mA
Peak collector current	$I_{CM}$	1		A
Base current	$I_B$	100		mA
Peak base current	$I_{BM}$	200		
Total power dissipation, $T_S = 79^\circ\text{C}$	$P_{tot}$	330		mW
Junction temperature	$T_j$	150		$^\circ\text{C}$
Storage temperature	$T_{Stg}$	-65 ... 150		

## Thermal Resistance

Junction - soldering point <sup>1)</sup>	$R_{thJS}$	$\leq 215$	K/W
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<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

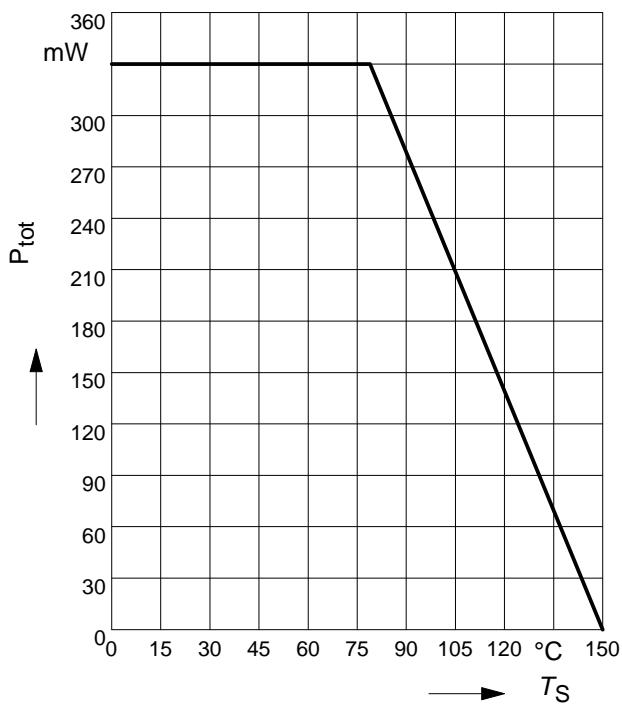
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 10 \text{ mA}, I_B = 0$	$V_{(\text{BR})\text{CEO}}$	45	-	-	V
		25	-	-	
Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$	$V_{(\text{BR})\text{CBO}}$	50	-	-	
		30	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(\text{BR})\text{EBO}}$	5	-	-	
Collector cutoff current $V_{CB} = 25 \text{ V}, I_E = 0$	$I_{\text{CBO}}$	-	-	100	nA
Collector cutoff current $V_{CB} = 25 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	$I_{\text{CBO}}$	-	-	50	µA
Emitter cutoff current $V_{EB} = 4 \text{ V}, I_C = 0$	$I_{\text{EBO}}$	-	-	100	nA
DC current gain 1) $I_C = 100 \text{ mA}, V_{CE} = 1 \text{ V}$	$h_{\text{FE}}$	100	160	250	-
	$h_{\text{FE}}\text{-grp. 16}$	160	250	400	
	$h_{\text{FE}}\text{-grp. 25}$	250	350	630	
DC current gain 1) $I_C = 500 \text{ mA}, V_{CE} = 1 \text{ V}$	$h_{\text{FE}}$	40	-	-	
Collector-emitter saturation voltage1) $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	$V_{\text{CEsat}}$	-	-	0.7	V
Base-emitter saturation voltage 1) $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	$V_{\text{BEsat}}$	-	-	1.2	

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

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

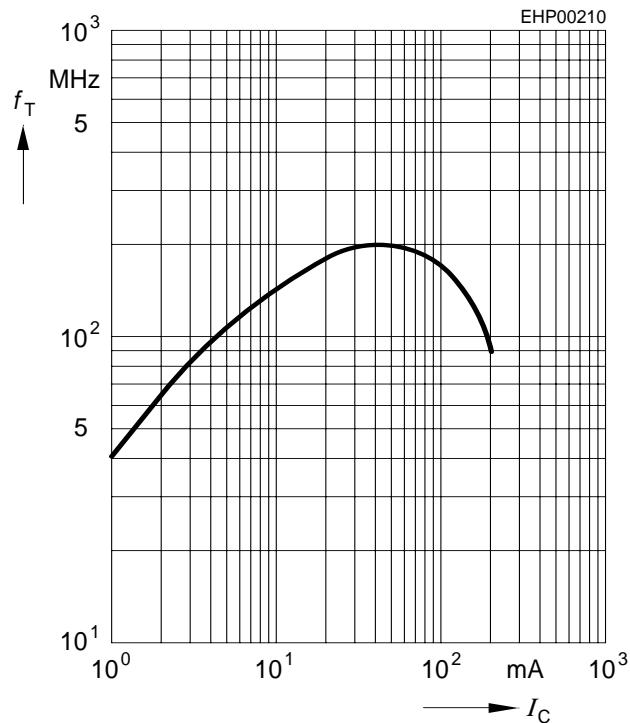
<b>Parameter</b>	<b>Symbol</b>	<b>Values</b>			<b>Unit</b>
		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>AC Characteristics</b>					
Transition frequency $I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}, f = 100 \text{ MHz}$	$f_T$	-	200	-	MHz
Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	$C_{cb}$	-	10	-	pF
Emitter-base capacitance $V_{EB} = 0.5 \text{ V}, f = 1 \text{ MHz}$	$C_{eb}$	-	60	-	

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



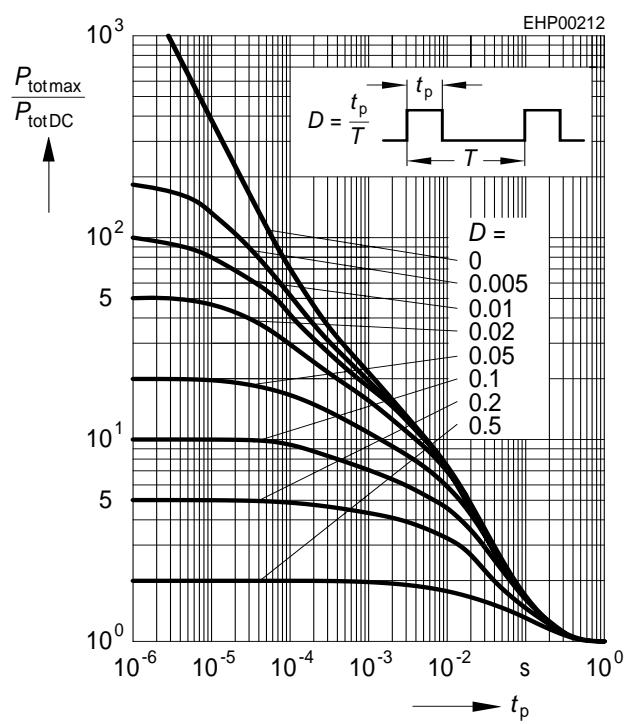
**Transition frequency**  $f_T = f(I_C)$

$V_{\text{CE}} = 5\text{V}$



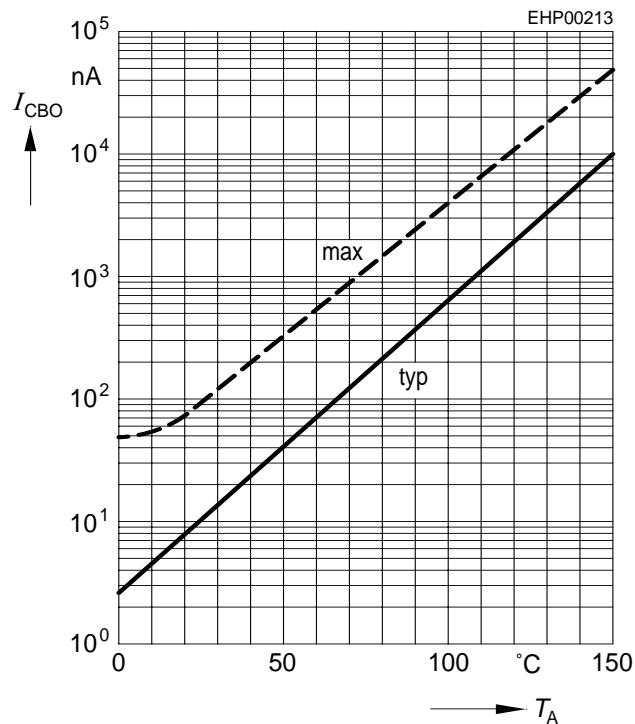
**Permissible pulse load**

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



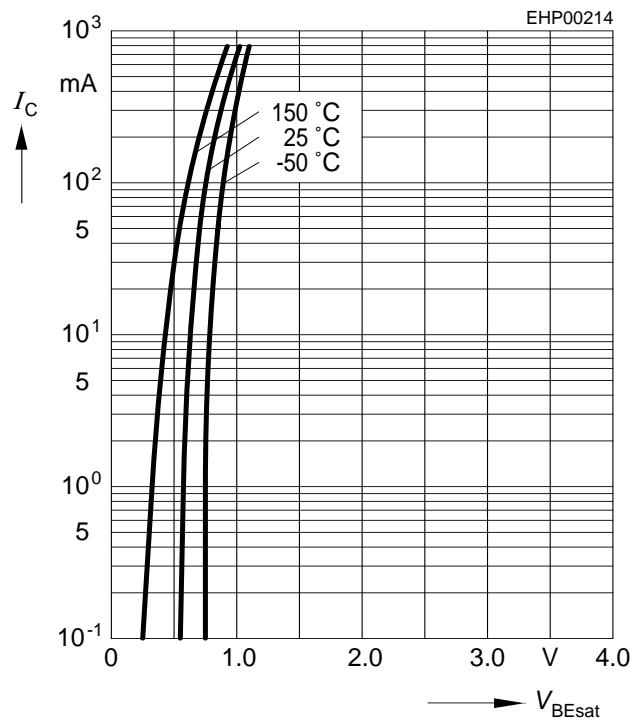
**Collector cutoff current**  $I_{\text{CBO}} = f(T_A)$

$V_{\text{CBO}} = 25\text{V}$

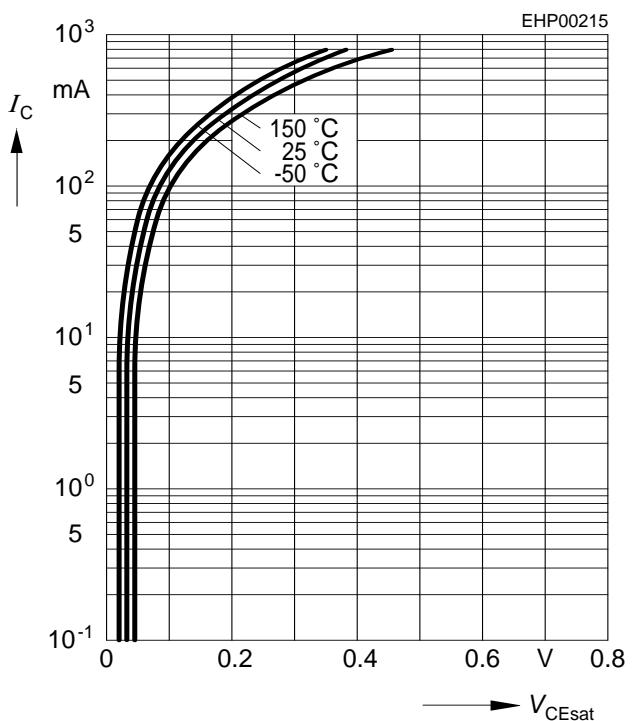


**Base-emitter saturation voltage**

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


**Collector-emitter saturation voltage**

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


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

$$V_{CE} = 1\text{V}$$

