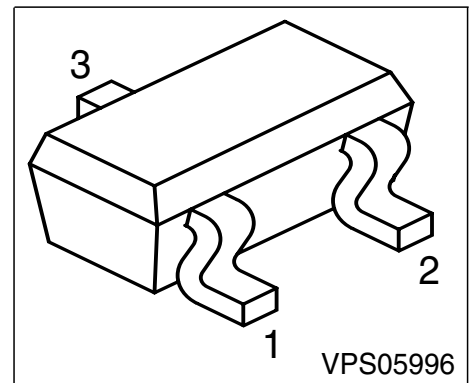


PNP Silicon AF Transistor
Preliminary data

- For AF input stages and driver applications
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC 846T



Type	Marking	Pin Configuration			Package
BC856AT	3As	1 = B	2 = E	3 = C	SC75
BC856BT	3Bs	1 = B	2 = E	3 = C	SC75

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	65	V
Collector-base voltage	V_{CBO}	80	
Collector-emitter voltage	V_{CES}	80	
Emitter-base voltage	V_{EBO}	5	
DC collector current	I_C	100	mA
Peak collector current	I_{CM}	200	mA
Total power dissipation, $T_S = 109\text{ °C}$	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Junction - soldering point ¹⁾	R_{thJS}	≤165	K/W
--	------------	------	-----

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

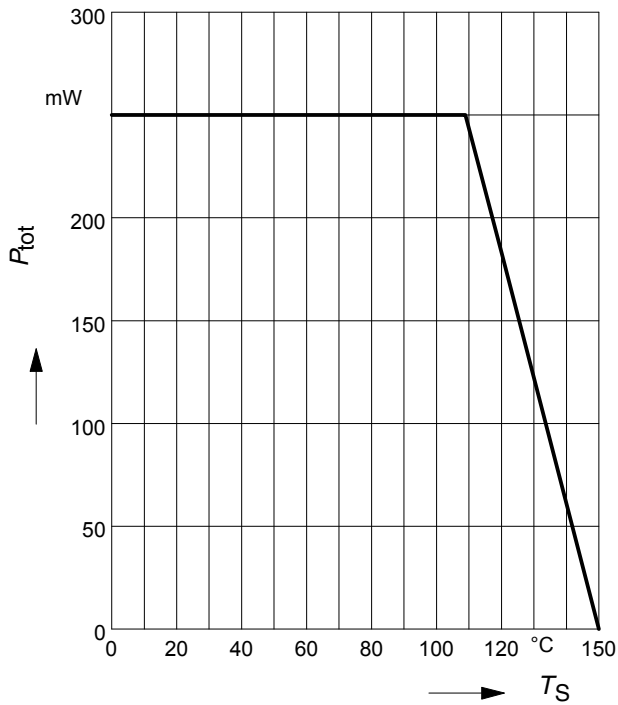
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics per Transistor					
Collector-emitter breakdown voltage $I_C = 10 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	65	-	-	V
Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	80	-	-	
Collector-emitter breakdown voltage $I_C = 10 \mu\text{A}, V_{BE} = 0$	$V_{(BR)CES}$	80	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current $V_{CB} = 30 \text{ V}, I_E = 0$	I_{CBO}	-	-	15	nA
Collector cutoff current $V_{CB} = 30 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	I_{CBO}	-	-	5	μA
DC current gain 1) $I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ V}$ BC856AT $I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ V}$ BC856BT $I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}$ BC856AT $I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}$ BC856BT	h_{FE}	- - 125 220	140 250 180 290	- - 250 475	-
Collector-emitter saturation voltage1) $I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$	V_{CEsat}	- -	90 250	300 650	mV
Base-emitter saturation voltage 1) $I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$	V_{BEsat}	- -	700 850	- -	mV
Base-emitter voltage 1) $I_C = 2 \text{ mA}, V_{CE} = 5 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}$	$V_{BE(ON)}$	600 -	650 -	750 820	

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

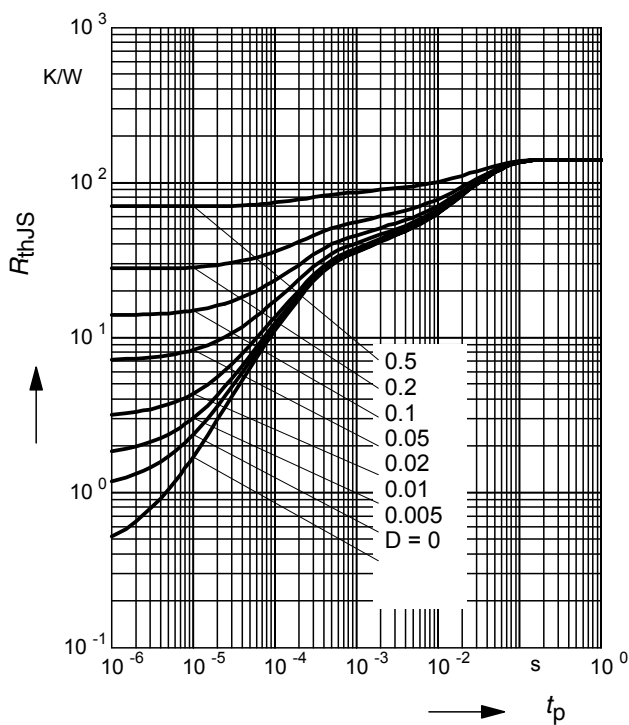
Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics per Transistor					
Transition frequency $I_C = 20\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 100\text{ MHz}$	f_T	-	250	-	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{cb}	-	3	-	pF
Emitter-base capacitance $V_{EB} = 0.5\text{ V}$, $f = 1\text{ MHz}$	C_{eb}	-	8	-	
Short-circuit input impedance $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856AT $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856BT	h_{11e}	-	2.7 4.5	-	k Ω
Open-circuit reverse voltage transf.ratio $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856AT $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856BT	h_{12e}	-	1.5 2	-	10^{-4}
Short-circuit forward current transf.ratio $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856AT $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856BT	h_{21e}	-	200 330	-	-
Open-circuit output admittance $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856AT $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 1\text{ kHz}$ BC856BT	h_{22e}	-	18 30	-	μS

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

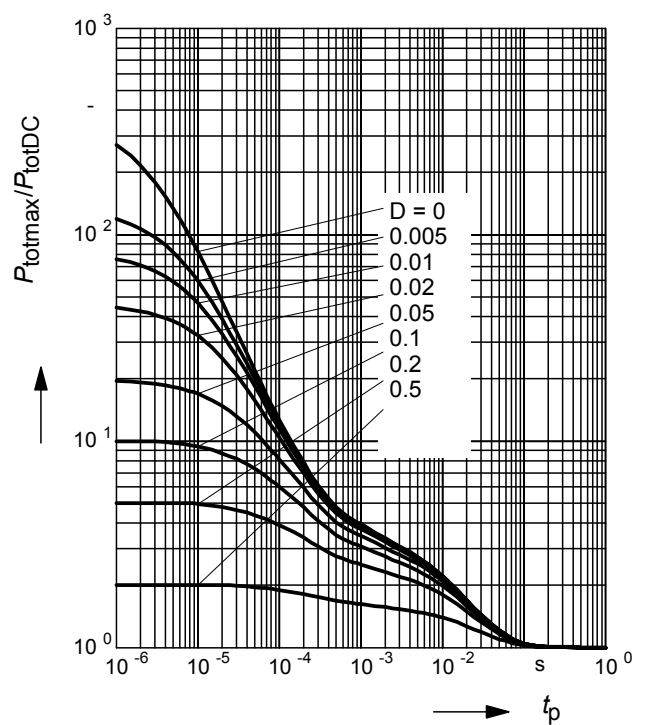


Permissible Pulse Load $R_{thJS} = f(t_p)$



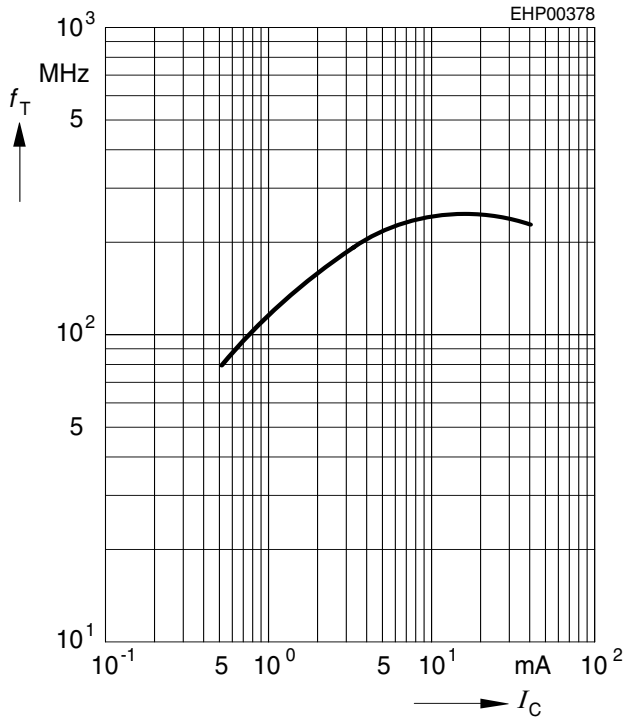
Permissible Pulse Load

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



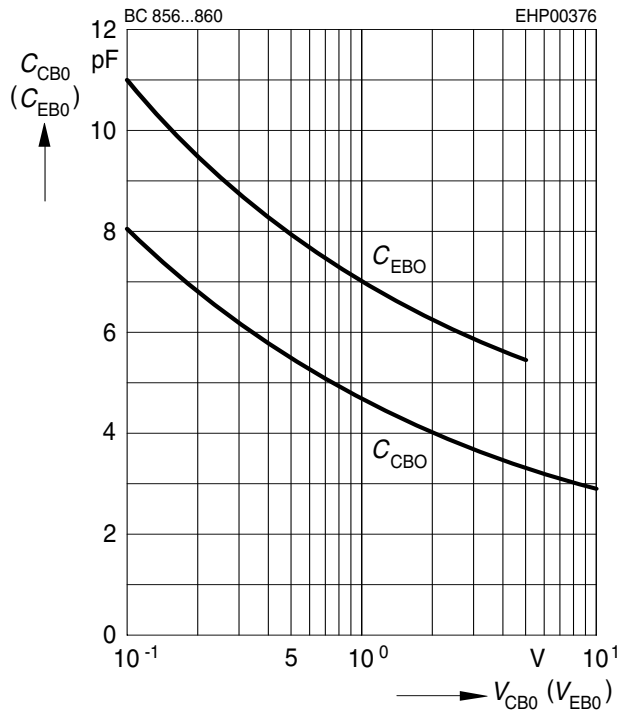
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$



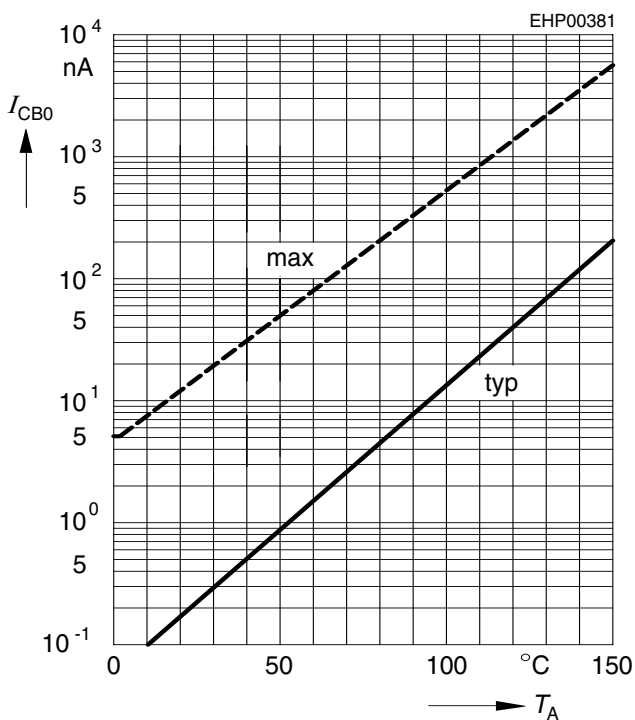
Collector-base capacitance $C_{CB} = f(V_{CB0})$

Emitter-base capacitance $C_{EB} = f(V_{EB0})$



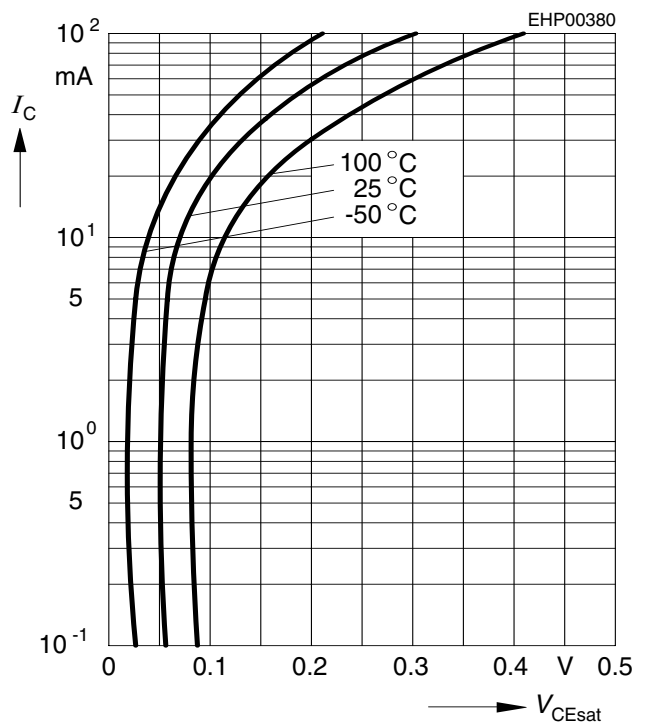
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = 30V$



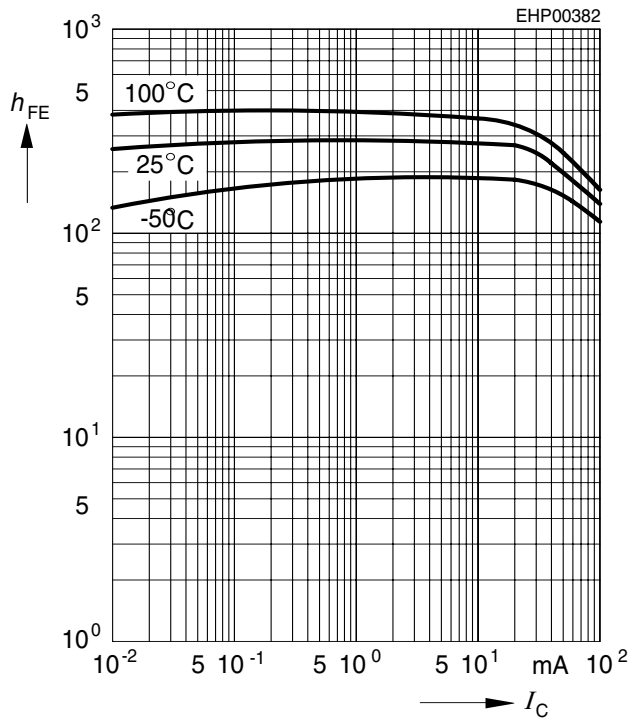
Collector-emitter saturation voltage

$I_C = f(V_{CEsat}), h_{FE} = 20$



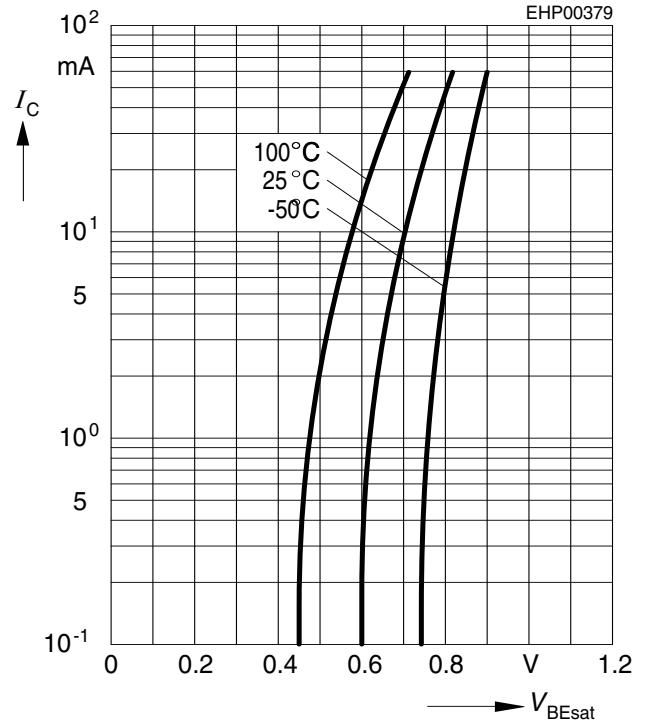
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5V$



Base-emitter saturation voltage

$I_C = f(V_{BEsat}), h_{FE} = 20$



This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.