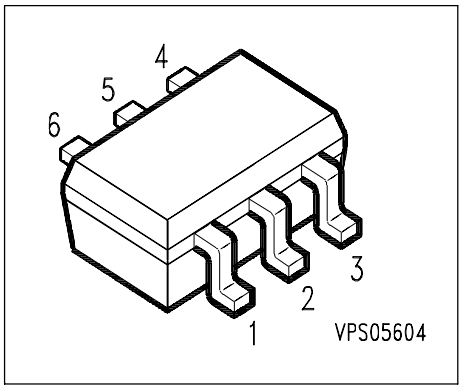
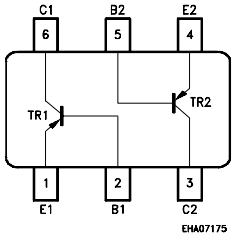
PNP Silicon AF Transistor Array

- For AF input stages and driver applications
- High current gain
- Low collector-emitter saturation voltage
- Two (galvanic) internal isolated Transistors in one package





Type	Marking	Ordering Code	Pin Configuration			Package
BC 857S	3Cs	Q62702-2373	1/4=E1/E2	2/5=B1/B2	3/6=C2/C1	SOT-363

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	45	V
Collector-base voltage	V_{CBO}	50	
Collector-emitter voltage	V_{CES}	50	
Emitter-base voltage	V_{EBO}	5	
DC collector current	I_C	100	mA
Peak collector current	I_{CM}	200	
Total power dissipation, T_S = 115°C	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction ambient [1)]	R_{thJA}	≤ 275	K/W
Junction - soldering point	R_{thJS}	≤ 140	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 0.5cm^2 Cu

Electrical Characteristics at T_A=25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics per Transistor					
Collector-emitter breakdown voltage I_C = 10 mA, I_B = 0	$V_{(BR)CEO}$	45	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_B = 0	$V_{(BR)CBO}$	50	-	-	
Collector-emitter breakdown voltage I_C = 10 µA, V_{BE} = 0	$V_{(BR)CES}$	50	-	-	
Base-emitter breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current V_{CB} = 30 V, I_E = 0 , T_A = 25 °C	I_{CBO}	-	1	15	nA
DC current gain 1) I_C = 10 µA, V_{CE} = 5 V I_C = 2 mA, V_{CE} = 5 V	h_{FE}	- 125	250 290	- 630	-
Collector-emitter saturation voltage 1) I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5 mA	V_{CEsat}	- -	75 250	300 650	mV
Base-emitter saturation voltage 1) I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5 mA	V_{BEsat}	- -	700 850	- -	
Base-emitter voltage I_C = 10 mA, V_{CE} = 5 V	V_{BE}	600 -	650 -	750 820	

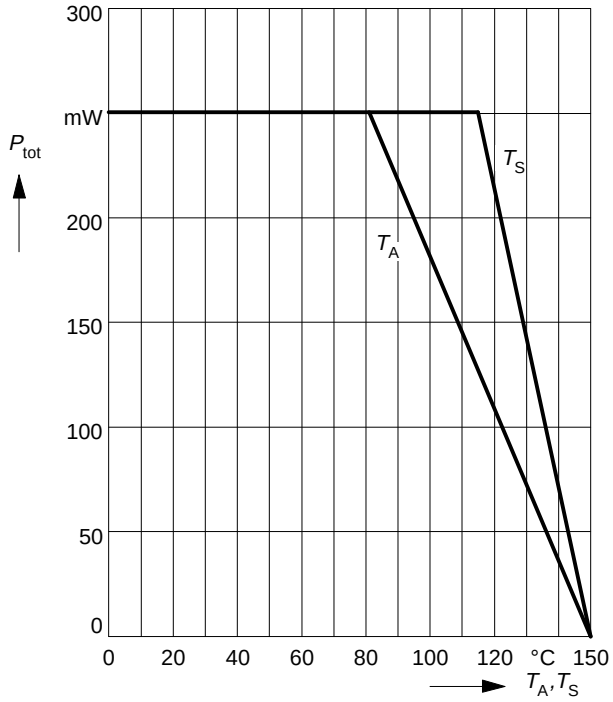
1) Pulse test: t < 300µs; D < 2%

Electrical Characteristics at T_A=25°C, unless otherwise specified

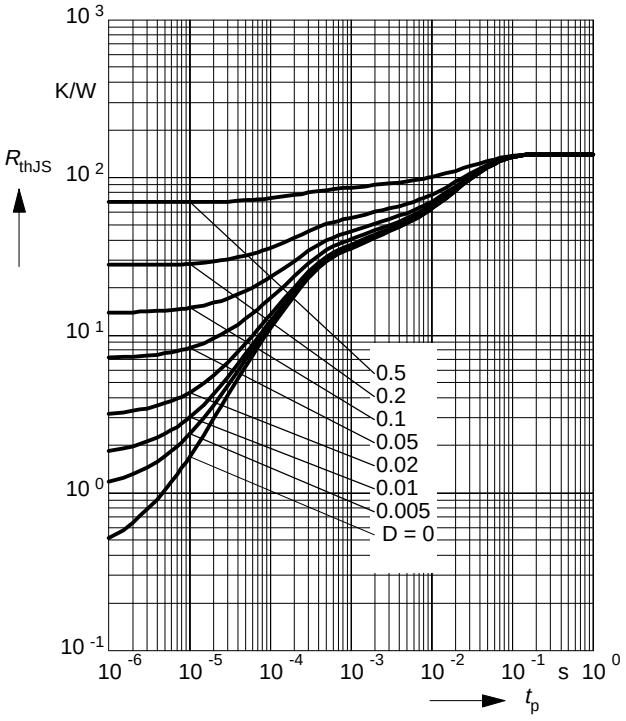
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics per Transistor					
Transition frequency I_C = 20 mA, V_{CE} = 5 V, f = 100 MHz	f_T	-	250	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	3	-	pF
Emitter-base capacitance V_{EB} = 0.5 V, f = 1 MHz	C_{eb}	-	10	-	
Short-circuit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

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

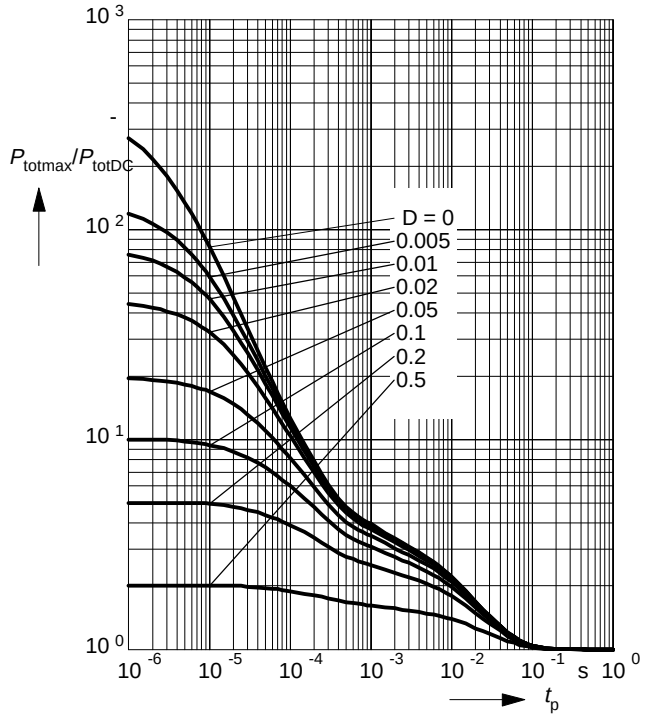
* Package mounted on epoxy



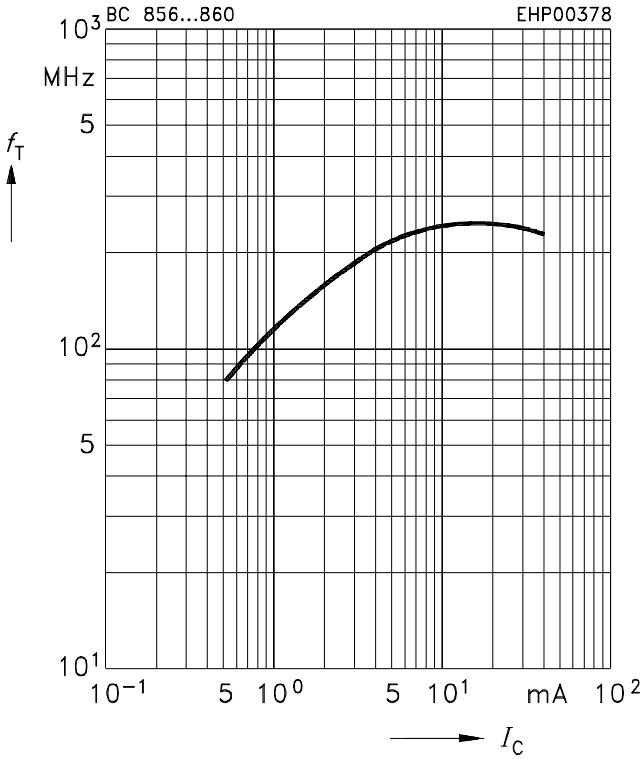
Permissible Pulse Load $R_{thJS} = f(t_p)$



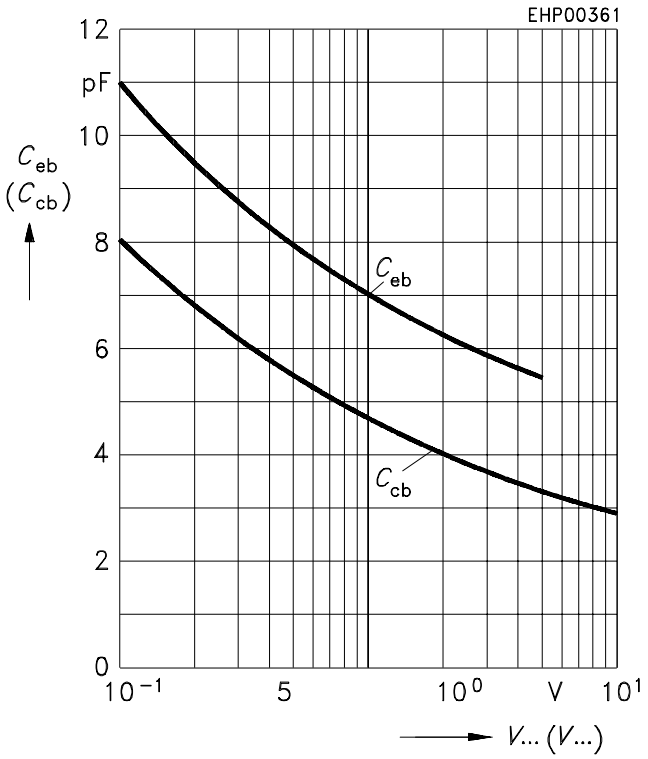
Permissible Pulse Load $P_{totmax} / P_{totDC} = f(t_p)$



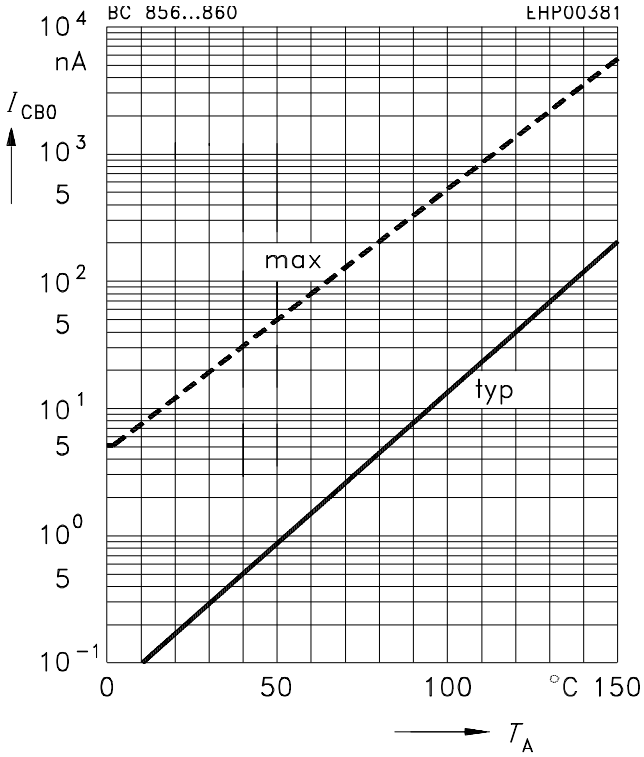
Transition frequency $f_T = f(I_C)$
VCE = 5V



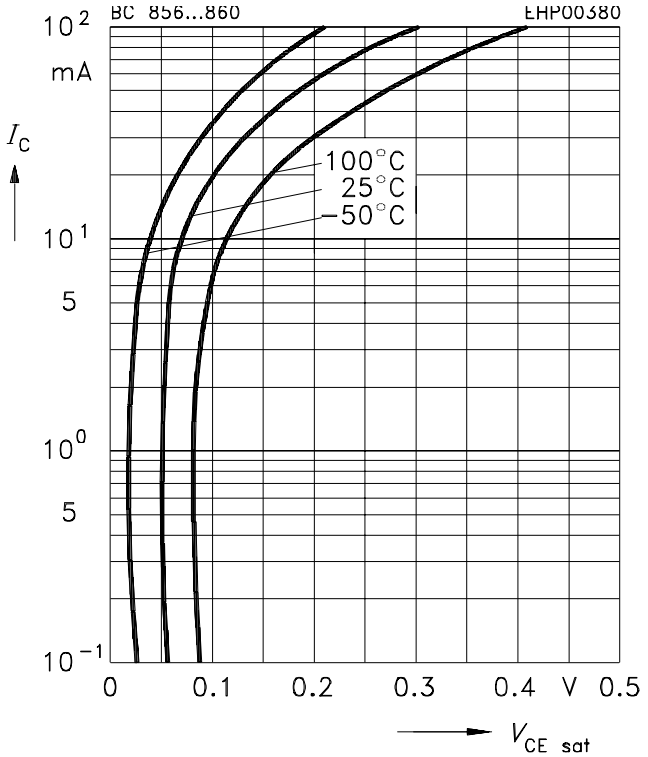
Collector-base capacitance $C_{CBO} = f(V_{CBO})$
Emitter-base capacitance $C_{EBO} = f(V_{EBO})$



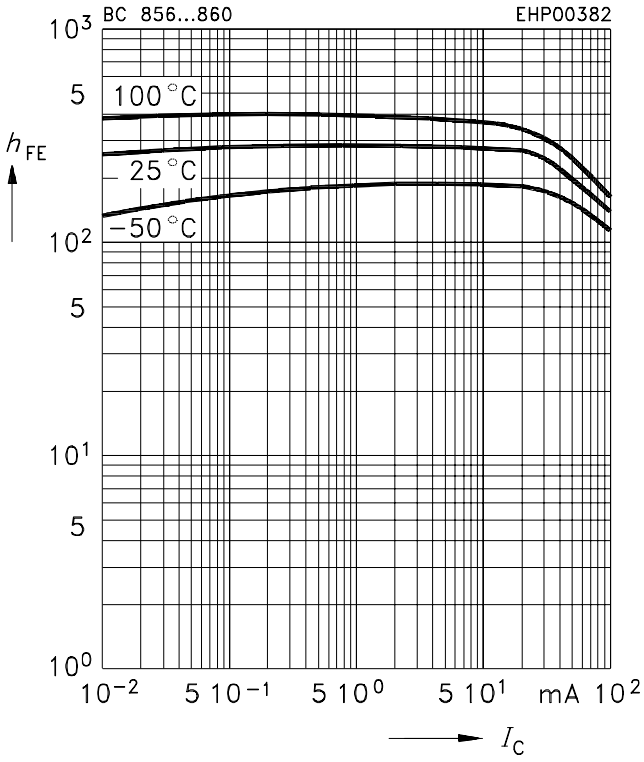
Collectot cutoff current $I_{CBO} = f(T_A)$
V_{CB} = 30V



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