# SIEMENS

PNP Silicon Darlington Transistors

BC 876
... BC 880

- High current gain
- High collector current
- Low collector-emitter Saturation vottage
- Complementary **types:** BC 875, BC 877,
  BC 879 (NPN)

YPT05212

Type	Marking	Ordering Code	Pin Configuration 1	2	3	Package[1]
BC876	–	C62702-C943	E	C	B	TO-92
BC 878		C62702-C942				
BC880	.	C62702-C941				

Maximum Ratings

Parameter	Symbol	Values BC 876	BC 878	BC 880	Unit
Collector-emitter voltage	VCM	45	60	80	V
Collector-base voltage	V_{CB0}	60	80	100	
Emitter-base voltage	V_{EB0}		5		
Collector current	I_C		1		A
Peak collector current	I_{CM}		2		
Base current	I_B		100		mA'
Peak base current	I_{BM}		200		
Total power dissipation. $T_C = 90\ °C$ [2]	P_{tot}		0.8 (1)		W
Junction temperature	T_j		150		°C
Storage temperature range	T_{stg}		-65 . . . + 150		

Thermal Resistance

Junction - ambient [2]	$R_{th\ JA}$	≤ 156	K/W
Junction - case [3]	$R_{th\ JC}$	≤ 75	

[1] For detailed information see chapter Package Outlines.
[2] If transistors with max. 4 mm lead length are fixed on PCBs with a min. 10 mm × 10 mm large copper area for the collector terminal, $R_{th JA} = 125$ K/W and thus $P_{tot\ max} \approx 1$ W at $T_A = 25$ °C.
[3] Mounted on Al heat sink 15 mm × 25 mm × 0.5 mm.

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics
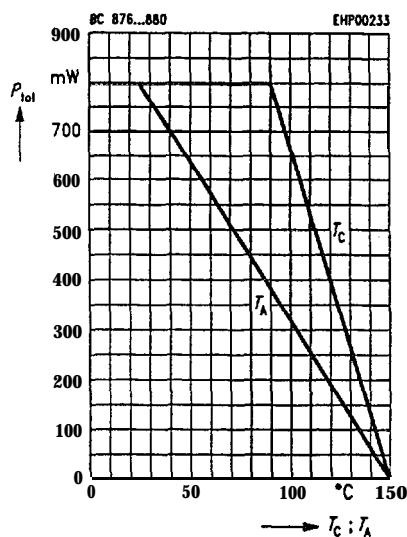
Collector-emitter breakdown voltage $I_C = 50$ mA	$V_{(BR)CEO}$				V
BC 876		*45*	–	–	
BC 878		*60*	–	–	
BC 880		*80*	–	–	
Collector-base breakdown voltage $I_C = 100\ \mu A$	$V_{(BR)CBO}$				
BC 876		*60*	–	–	
BC 878		*80*	–	–	
BC 880		100	–	–	
Emitter-base breakdown voltage, $I_E = 100\ \mu A$	$V_{(BR)EBO}$	5	–	–	
Collector cutoff current $V_{CE} = 0.5 \times V_{CEmax}$	I_{CEO}		–	500	
Collector cutoff current $V_{CB} = V_{CBmax}$ $V_{CB} = V_{CBmax}, T_A = 150\ °C$	I_{CBO}		– –	100 20	nA μA
Emitter cutoff current, $V_{EB} = 4$ V	I_{EBO}		–	100	nA
DC current gain $I_C = 150$ mA; $V_{CE} = 10$ V [1] $I_C = 500$ mA; $V_{CE} = 10$ V [1]	h_{FE}	1000 2000'	– –	– –	–
Collector-emitter Saturation voltage [1] $I_C = 500$ mA, $I_B = 0.5$ mA $I_C = 1000$ mA, $I_B = 1$ mA	V_{CEsat}	– –	– –	1.3 1.8	V
Base-emitter Saturation voltage [1] $I_C = 1000$ mA: $I_B = 1$ mA	V_{BEsat}	–	–	2.2	

AC characteristics
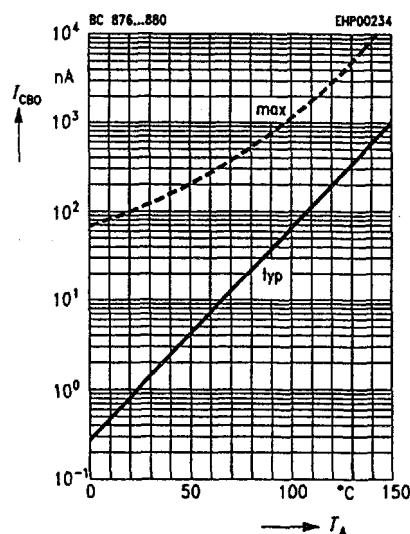
Transition frequency $I_C = 200$ mA, $V_{CE} = 5$ V, $f = 20$ MHz	f_T		150	–	MHz

---
[1] Pulse test: $t \le 300$ ps. $D \le 2$ %.
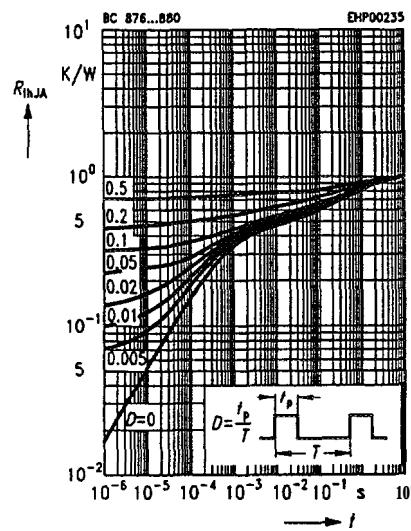
Total power dissipation $P_{tot} = f(T_A; T_C)$

BC 876...880   EHP00233
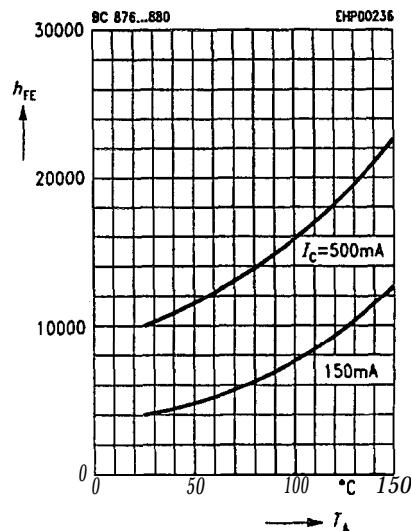
Collector cutoff current $I_{CBO} = f(T_A)$
$V_{CB} = 100$ V

BC 876...880   EHP00234
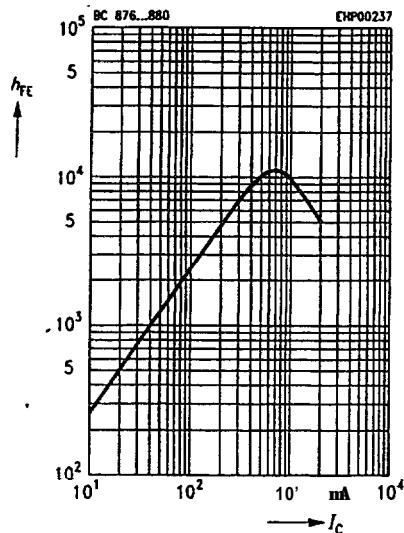
Permissible pulse load $R_{thJA} = f(t_p)$

BC 876...880   EHP00235
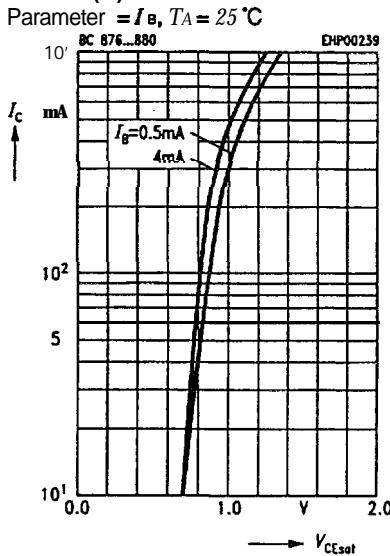
DC current gain $h_{FE} = f(T_A)$
$V_{CE} = 10$ V

BC 876...880   EHP00236

Siemens Aktiengesellschaft   **389**
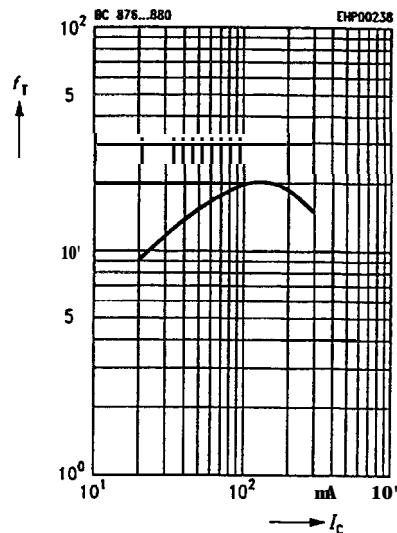
DC current gain $h_{FE} = f(I_C)$
$V_{CE} = 10$ V, $T_A = 25$ °C

Transition frequency $f_T = f(I_C)$
$V_{CE} = 5$ V, $f = 20$ MHz

Collector-emitter Saturation voltage
$V_{CEsat} = f(I_C)$
Parameter $= I_B$, $T_A = 25$ °C

Base-emitter Saturation voltage
$V_{BEsat} = f(I_C)$
Parameter $= I_B$, $T_A = 25$ °C