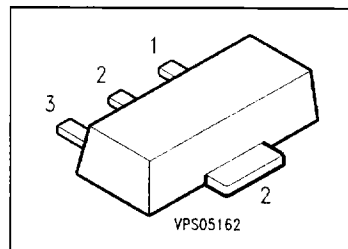


## PNP Silicon Darlington Transistors

**BCV 28**  
**BCV 48**

- For general AF applications
- High collector current
- High current gain
- Complementary types: BCV 29, BCV 49 (NPN)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration				Package <sup>1)</sup>
			1	2	3	4	
BCV 28	ED	Q62702-C1852	B	C	E	C	SOT-89
BCV 48	EE	Q62702-C1854					

### Maximum Ratings

Parameter	Symbol	Values		Unit
		BCV 28	BCV 48	
Collector-emitter voltage	$V_{CE0}$	30	60	V
Collector-base voltage	$V_{CB0}$	40	80	
Emitter-base voltage	$V_{EB0}$	10	10	
Collector current	$I_C$	500		mA
Peak collector current	$I_{CM}$	800		
Base current	$I_B$	100		
Peak base current	$I_{BM}$	200		
Total power dissipation, $T_s = 124\text{ °C}$	$P_{tot}$	1		W
Junction temperature	$T_j$	150		°C
Storage temperature range	$T_{stg}$	- 65 ... + 150		

### Thermal Resistance

Junction - ambient <sup>2)</sup>	$R_{thJA}$	≤ 72	K/W
Junction - soldering point	$R_{thJS}$	≤ 17	

<sup>1)</sup> For detailed information see chapter Package Outlines.

<sup>2)</sup> Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm<sup>2</sup> Cu.

## Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

### DC characteristics

Collector-emitter breakdown voltage $I_C = 10\text{ mA}$	$V_{(BR)CEO}$				V
BCV 28		30	–	–	
BCV 48		60	–	–	
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$				
BCV 28		40	–	–	
BCV 48		80	–	–	
Emitter-base breakdown voltage, $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	10	–	–	
Collector cutoff current $V_{CB} = 30\text{ V}$ BCV 28 $V_{CB} = 60\text{ V}$ BCV 48 $V_{CB} = 30\text{ V}, T_A = 150\text{ }^\circ\text{C}$ BCV 28 $V_{CB} = 60\text{ V}, T_A = 150\text{ }^\circ\text{C}$ BCV 48	$I_{CBO}$	–	–	100	nA
		–	–	100	nA
		–	–	10	$\mu\text{A}$
		–	–	10	$\mu\text{A}$
Emitter cutoff current, $V_{EB} = 4\text{ V}$	$I_{EBO}$	–	–	100	nA
DC current gain <sup>1)</sup> $I_C = 100\text{ }\mu\text{A}, V_{CE} = 1\text{ V}$ BCV 28 BCV 48 $I_C = 10\text{ mA}, V_{CE} = 5\text{ V}$ BCV 28 BCV 48 $I_C = 100\text{ mA}, V_{CE} = 5\text{ V}$ BCV 28 BCV 48 $I_C = 0.5\text{ A}, V_{CE} = 5\text{ V}$ BCV 28 BCV 48	$h_{FE}$	4000 2000 10000 4000 20000 10000 4000 2000	– – – – – – – –	– – – – – – – –	–
Collector-emitter saturation voltage <sup>1)</sup> $I_C = 100\text{ mA}, I_B = 0.1\text{ mA}$	$V_{CEsat}$	–	–	1	V
Base-emitter saturation voltage <sup>1)</sup> $I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	$V_{BEsat}$	–	–	1.5	

### AC characteristics

Transition frequency $I_C = 50\text{ mA}, V_{CE} = 5\text{ V}, f = 20\text{ MHz}$	$f_T$	–	200	–	MHz
Output capacitance $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	$C_{obo}$	–	4.5	–	pF

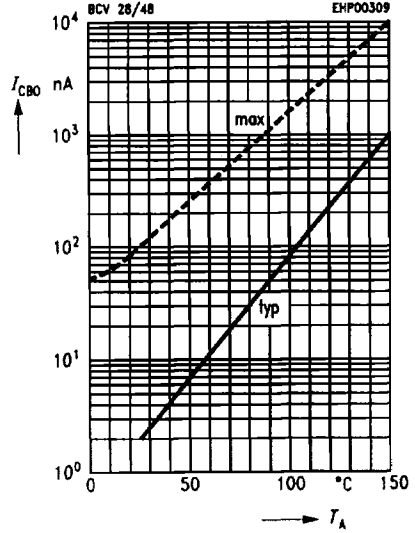
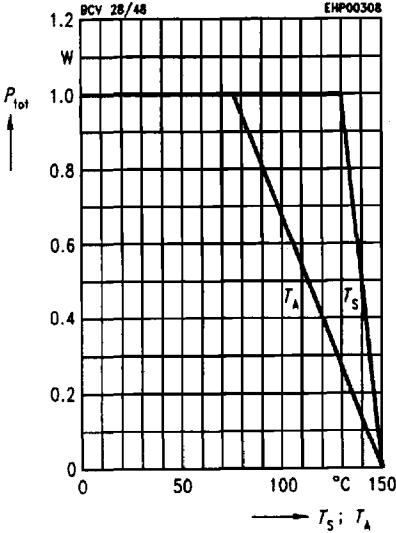
<sup>1)</sup> Pulse test:  $t \leq 300\text{ }\mu\text{s}, D = 2\text{ }\%$ .

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

\* Package mounted on epoxy

**Collector cutoff current  $I_{CB0} = f(T_A)$**

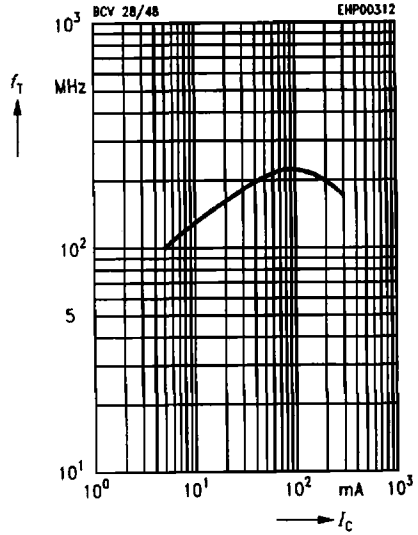
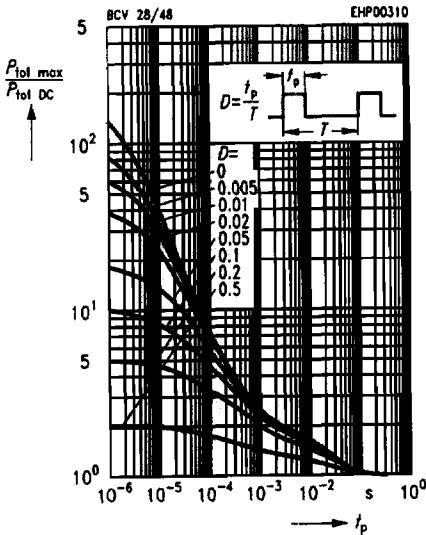
$V_{CB} = V_{CE\ max}$



**Permissible pulse load  $P_{tot\ max}/P_{tot\ DC} = f(t_p)$**

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

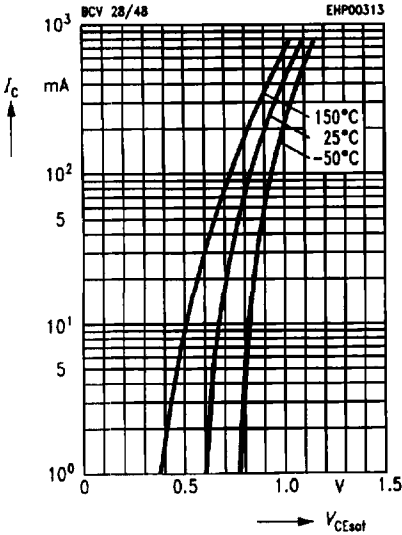
$V_{CE} = 5\ V$



**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat})$

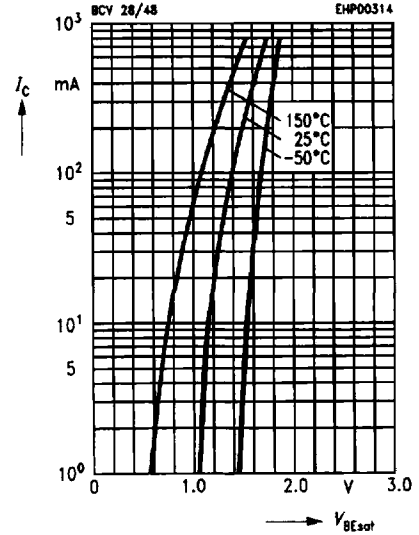
$h_{FE} = 1000$



**Base-emitter saturation voltage**

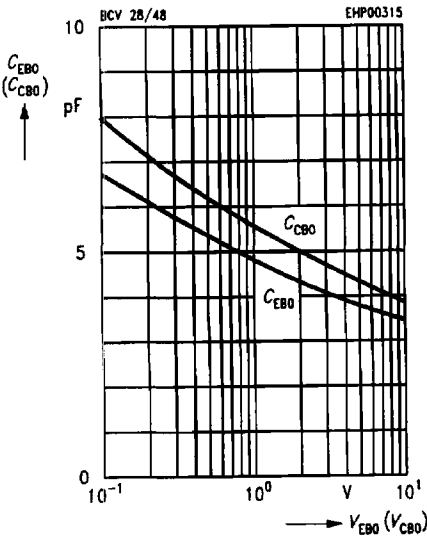
$I_C = f(V_{BEsat})$

$h_{FE} = 1000$



**Collector-base capacitance  $C_{CBo} = f(V_{CBo})$**

**Emitter-base capacitance  $C_{EBo} = f(V_{EBo})$**



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

$V_{CE} = 5 V$

