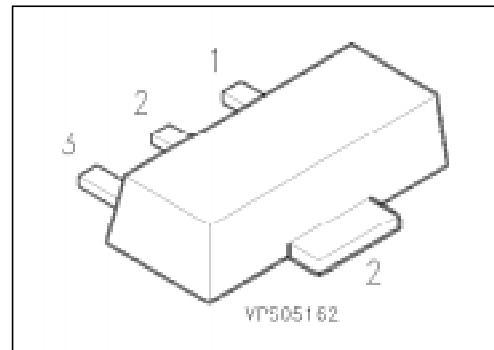


PNP Silicon Darlington Transistors

**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	1	2	3	4	Package ¹⁾
BCV 28	ED	Q62702-C1852	B	C	E	C	SOT-89	
BCV 48	EE	Q62702-C1854						

Maximum Ratings

Parameter	Symbol	Values BCV 28	BCV 48	Unit
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, $T_S = 124^\circ\text{C}$	P_{tot}		1	W
Junction temperature	T_j		150	$^\circ\text{C}$
Storage temperature range	T_{stg}		– 65 ... + 150	

Thermal Resistance

Junction - ambient ²⁾	$R_{th JA}$	≤ 72	K/W
Junction - soldering point	$R_{th JS}$	≤ 17	

¹⁾ For detailed information see chapter Package Outlines.

²⁾ Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics

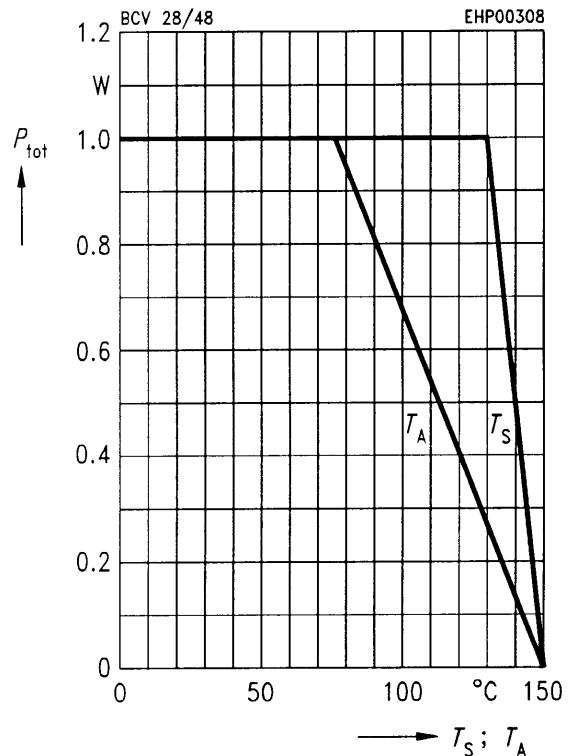
Collector-emitter breakdown voltage $I_C = 10 \text{ mA}$	$V_{(\text{BR})\text{CE}0}$				V
BCV 28		30	—	—	
BCV 48		60	—	—	
Collector-base breakdown voltage $I_C = 100 \mu\text{A}$	$V_{(\text{BR})\text{CB}0}$				
BCV 28		40	—	—	
BCV 48		80	—	—	
Emitter-base breakdown voltage, $I_E = 10 \mu\text{A}$	$V_{(\text{BR})\text{EB}0}$	10	—	—	
Collector cutoff current $V_{\text{CB}} = 30 \text{ V}$	I_{CBO}				
BCV 28		—	—	100	nA
$V_{\text{CB}} = 60 \text{ V}$		—	—	100	nA
$V_{\text{CB}} = 30 \text{ V}, T_A = 150^\circ\text{C}$	BCV 28	—	—	10	μA
$V_{\text{CB}} = 60 \text{ V}, T_A = 150^\circ\text{C}$	BCV 48	—	—	10	μA
Emitter cutoff current, $V_{\text{EB}} = 4 \text{ V}$	I_{EBO}	—	—	100	nA
DC current gain ¹⁾ $I_C = 100 \mu\text{A}, V_{\text{CE}} = 1 \text{ V}$	h_{FE}				—
BCV 28		4000	—	—	
BCV 48		2000	—	—	
$I_C = 10 \text{ mA}, V_{\text{CE}} = 5 \text{ V}$	BCV 28	10000	—	—	
	BCV 48	4000	—	—	
$I_C = 100 \text{ mA}, V_{\text{CE}} = 5 \text{ V}$	BCV 28	20000	—	—	
	BCV 48	10000	—	—	
$I_C = 0.5 \text{ A}, V_{\text{CE}} = 5 \text{ V}$	BCV 28	4000	—	—	
	BCV 48	2000	—	—	
Collector-emitter saturation voltage ¹⁾ $I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$	V_{CEsat}	—	—	1	V
Base-emitter saturation voltage ¹⁾ $I_C = 100 \text{ mA}; I_B = 0.1 \text{ mA}$	V_{BEsat}	—	—	1.5	

AC characteristics

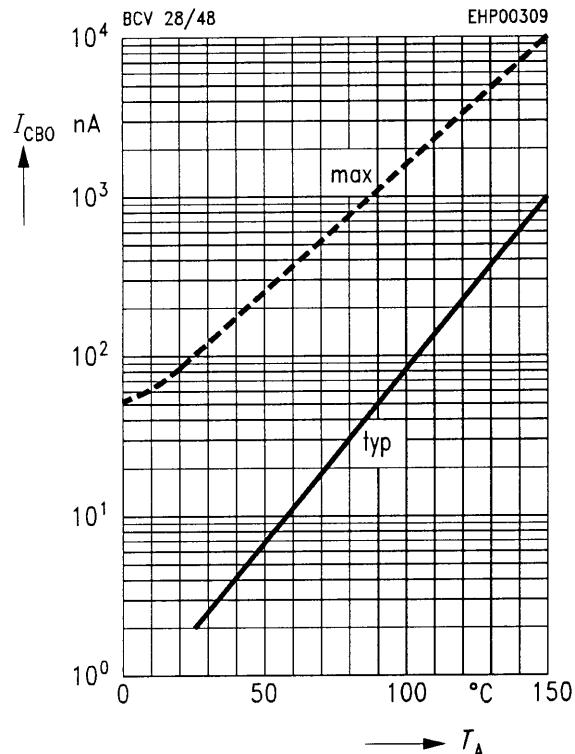
Transition frequency $I_C = 50 \text{ mA}, V_{\text{CE}} = 5 \text{ V}, f = 20 \text{ MHz}$	f	—	200	—	MHz
Output capacitance $V_{\text{CB}} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{obo}	—	4.5	—	pF

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

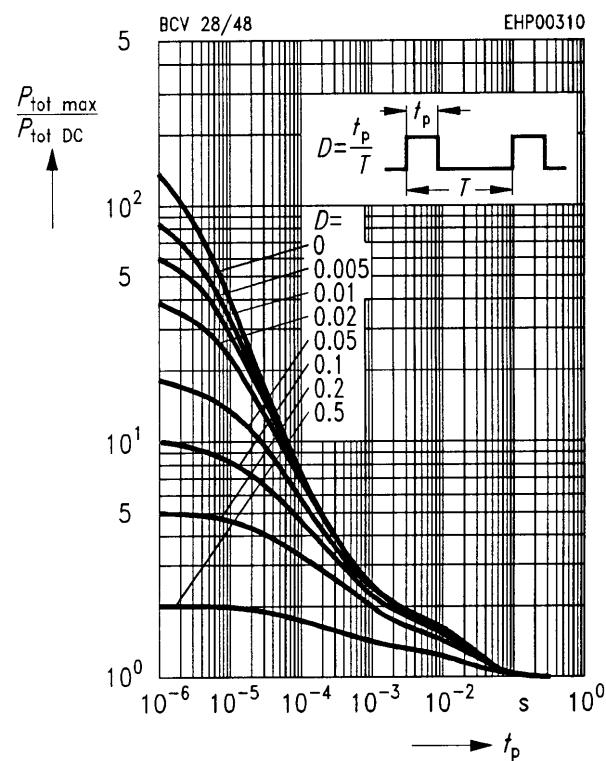
Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$
 * Package mounted on epoxy



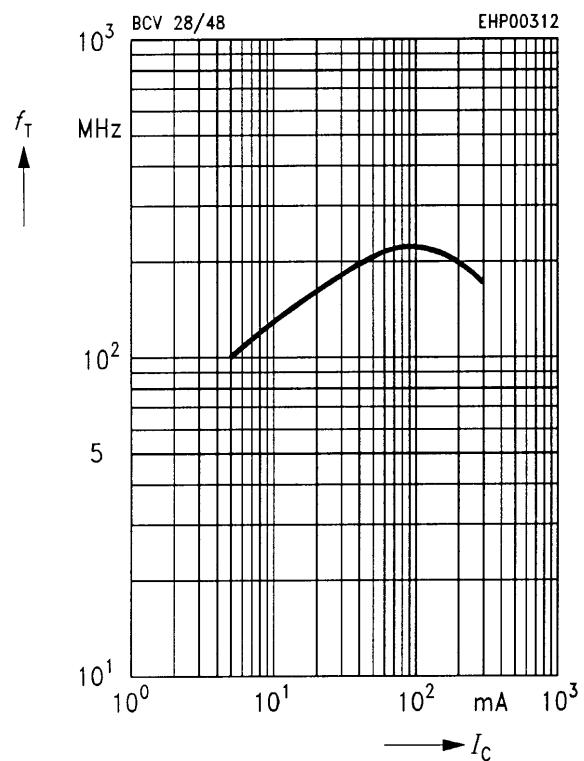
Collector cutoff current $I_{\text{CBO}} = f(T_A)$
 $V_{\text{CB}} = V_{\text{CE max}}$



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



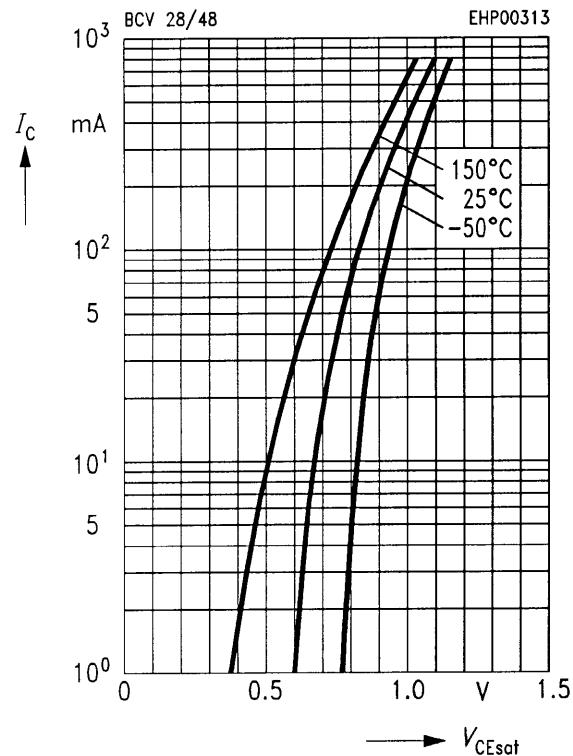
Transition frequency $f_T = f(I_C)$
 $V_{\text{CE}} = 5 \text{ V}$



Collector-emitter saturation voltage

$$I_C = f(V_{CEsat})$$

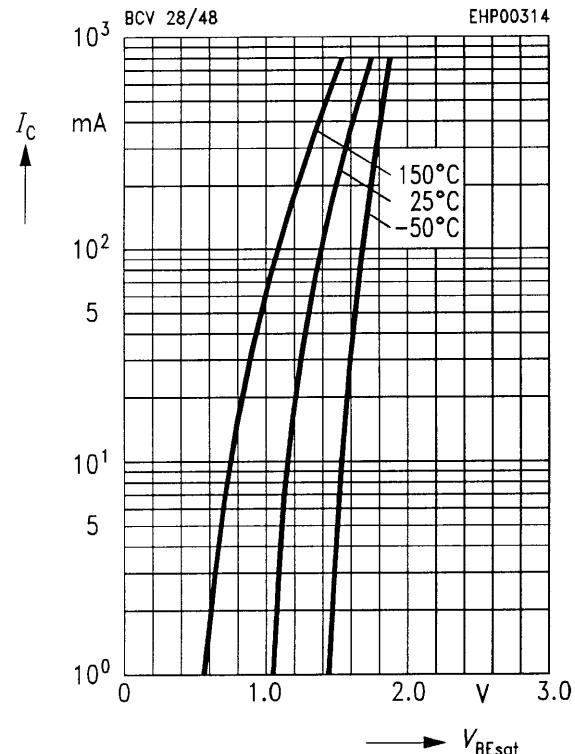
$$h_{FE} = 1000$$



Base-emitter saturation voltage

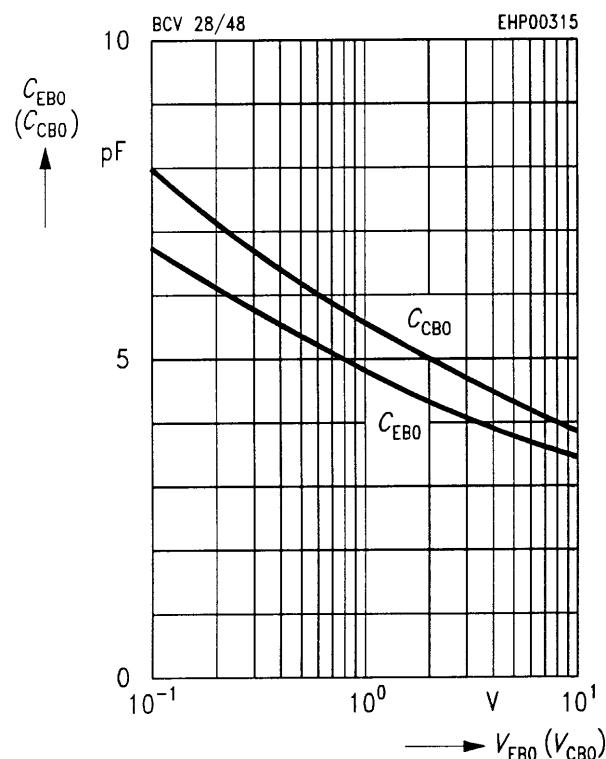
$$I_C = f(V_{BESat})$$

$$h_{FE} = 1000$$



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

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



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

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

