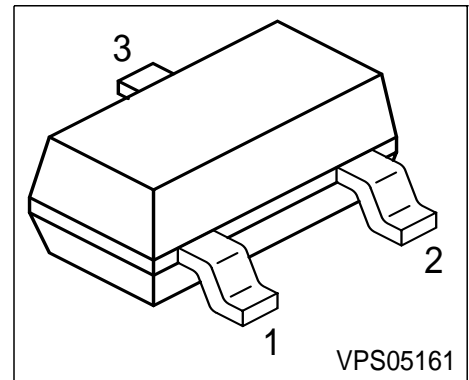


**PNP Silicon Switching Transistors**

- High DC current gain: 0.1mA to 500 mA
- Low collector-emitter saturation voltage
- Complementary types: BSS79, BSS81 (NPN)



Type	Marking	Pin Configuration			Package
BSS80B	CHs	1 = B	2 = E	3 = C	SOT23
BSS80C	CJs	1 = B	2 = E	3 = C	SOT23
BSS82B	CLs	1 = B	2 = E	3 = C	SOT23
BSS82C	CMs	1 = B	2 = E	3 = C	SOT23

**Maximum Ratings**

Parameter	Symbol	BSS80	BSS82	Unit
Collector-emitter voltage	$V_{CEO}$	40	60	V
Collector-base voltage	$V_{CBO}$	60		V
Emitter-base voltage	$V_{EBO}$	5		
DC collector current	$I_C$	800		mA
Peak collector current	$I_{CM}$	1		A
Base current	$I_B$	100		mA
Peak base current	$I_{BM}$	200		
Total power dissipation, $T_S = 77\text{ °C}$	$P_{tot}$	330		mW
Junction temperature	$T_j$	150		°C
Storage temperature	$T_{stg}$	-65 ... 150		

**Thermal Resistance**

Junction - soldering point <sup>1)</sup>	$R_{thJS}$	≤220	K/W
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<sup>1)</sup>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.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 10\text{ mA}, I_B = 0$	$V_{(BR)CEO}$				V
BSS80		40	-	-	
BSS82		60	-	-	
Collector-base breakdown voltage $I_C = 10\ \mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	60	-	-	
Emitter-base breakdown voltage $I_E = 10\ \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current $V_{CB} = 50\text{ V}, I_E = 0$	$I_{CBO}$	-	-	10	nA
Collector cutoff current $V_{CB} = 50\text{ V}, I_E = 0, T_A = 150\ ^\circ\text{C}$	$I_{CBO}$	-	-	10	$\mu\text{A}$
Emitter cutoff current $V_{EB} = 3\text{ V}, I_C = 0$	$I_{EBO}$	-	-	10	nA
DC current gain 1) $I_C = 100\ \mu\text{A}, V_{CE} = 10\text{ V}$	$h_{FE}$	BSS80/82B	40	-	-
		BSS80/82C	75	-	-
$I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	$h_{FE}$	BSS80/82B	40	-	-
		BSS80/82C	100	-	-
$I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$	$h_{FE}$	BSS80/82B	40	-	-
		BSS80/82C	100	-	-
$I_C = 150\text{ mA}, V_{CE} = 10\text{ V}$	$h_{FE}$	BSS80/82B	40	-	120
		BSS80/82C	100	-	300
$I_C = 500\text{ mA}, V_{CE} = 10\text{ V}$	$h_{FE}$	BSS80/82B	40	-	-
		BSS80/82C	50	-	-
Collector-emitter saturation voltage1) $I_C = 150\text{ mA}, I_B = 15\text{ mA}$ $I_C = 500\text{ mA}, I_B = 50\text{ mA}$	$V_{CEsat}$				V
			-	-	0.4
			-	-	1.6
Base-emitter saturation voltage 1) $I_C = 150\text{ mA}, I_B = 15\text{ mA}$ $I_C = 500\text{ mA}, I_B = 50\text{ mA}$	$V_{BEsat}$				
			-	-	1.3
			-	-	2.6

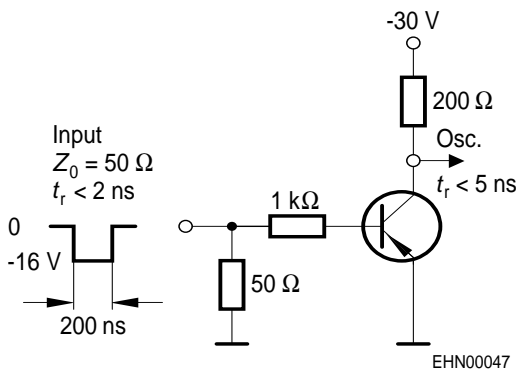
 1) Pulse test:  $t \leq 300\ \mu\text{s}$ ,  $D = 2\%$

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

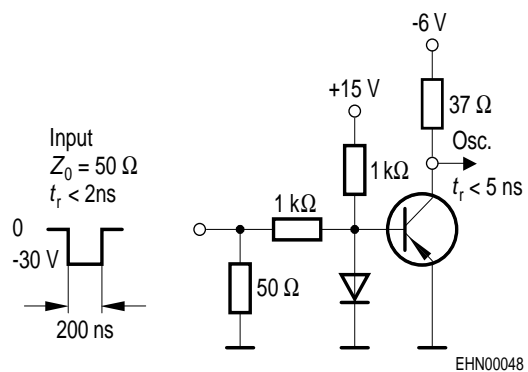
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>AC Characteristics</b>					
Transition frequency $I_C = 20\text{ mA}$ , $V_{CE} = 20\text{ V}$ , $f = 100\text{ MHz}$	$f_T$	-	250	-	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{cb}$	-	6	-	pF
Delay time $V_{CC} = 30\text{ V}$ , $I_C = 150\text{ mA}$ , $I_{B1} = 15\text{ mA}$ , $V_{BE(off)} = 0.5\text{ V}$	$t_d$	-	-	10	ns
Rise time $V_{CC} = 30\text{ V}$ , $I_C = 150\text{ mA}$ , $I_{B1} = 15\text{ mA}$ , $V_{BE(off)} = 0.5\text{ V}$	$t_r$	-	-	40	
Storage time $V_{CC} = 30\text{ V}$ , $I_C = 150\text{ mA}$ , $I_{B1} = I_{B2} = 15\text{ mA}$	$t_{stg}$	-	-	80	
Fall time $V_{CC} = 30\text{ V}$ , $I_C = 150\text{ mA}$ , $I_{B1} = I_{B2} = 15\text{ mA}$	$t_f$	-	-	30	

### Test circuits

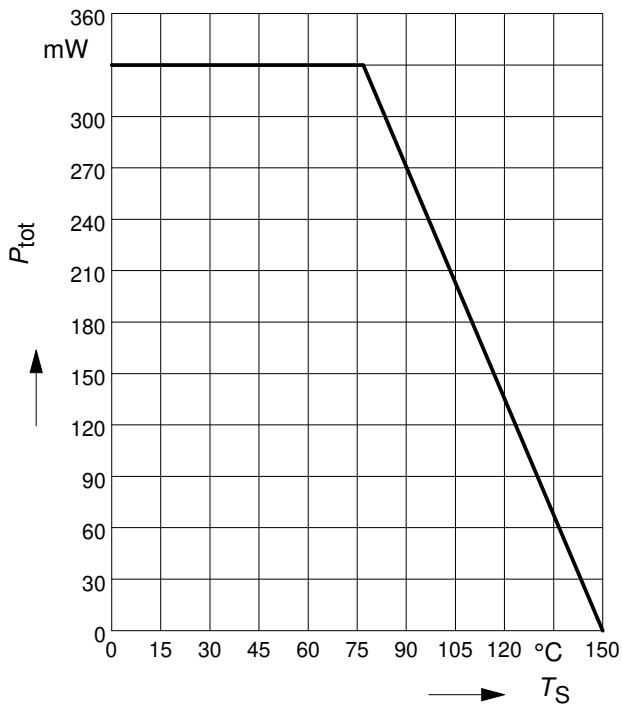
#### Delay and rise time



#### Storage and fall time

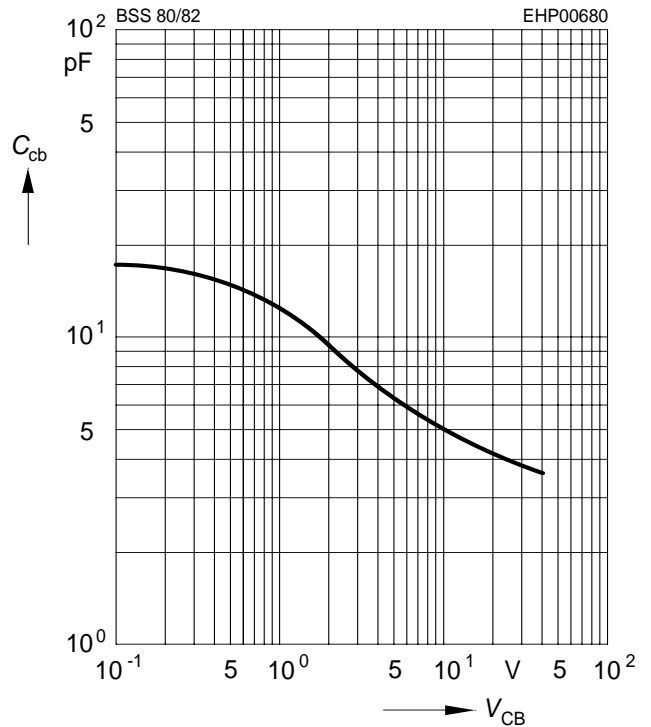


**Total power dissipation  $P_{tot} = f(T_S)$**



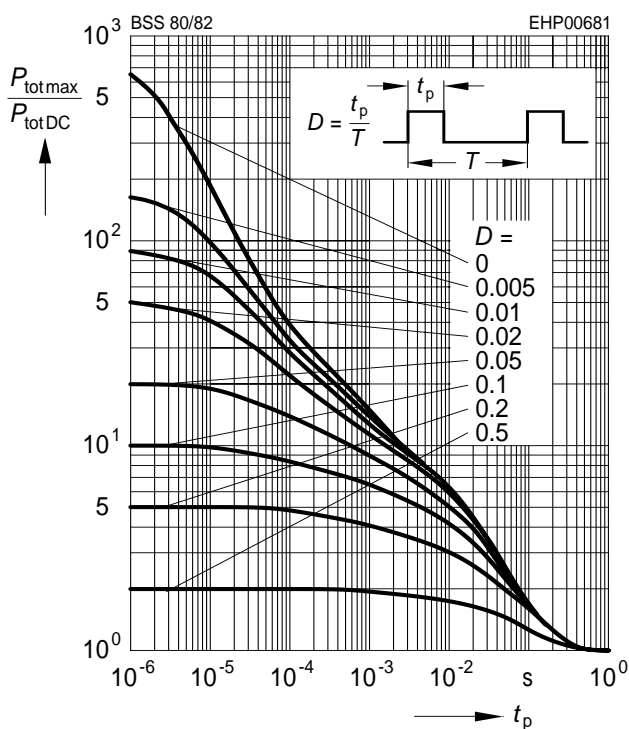
**Collector-base capacitance  $C_{CB} = f(V_{CB})$**

$f = 1\text{MHz}$



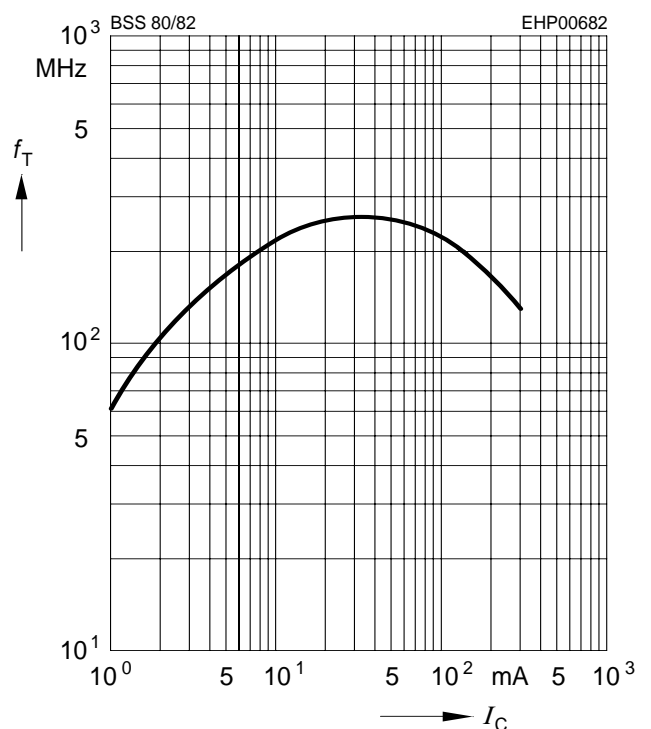
**Permissible pulse load**

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

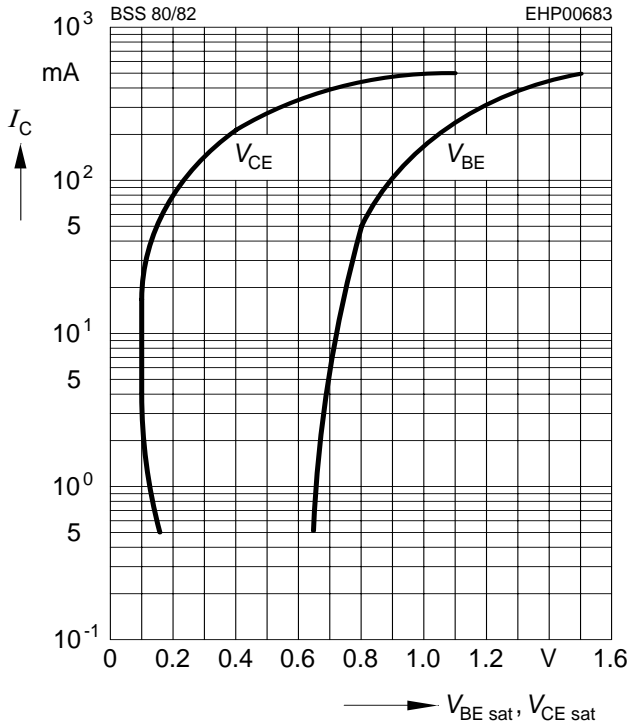


**Transition frequency  $f_T = f(I_C)$**

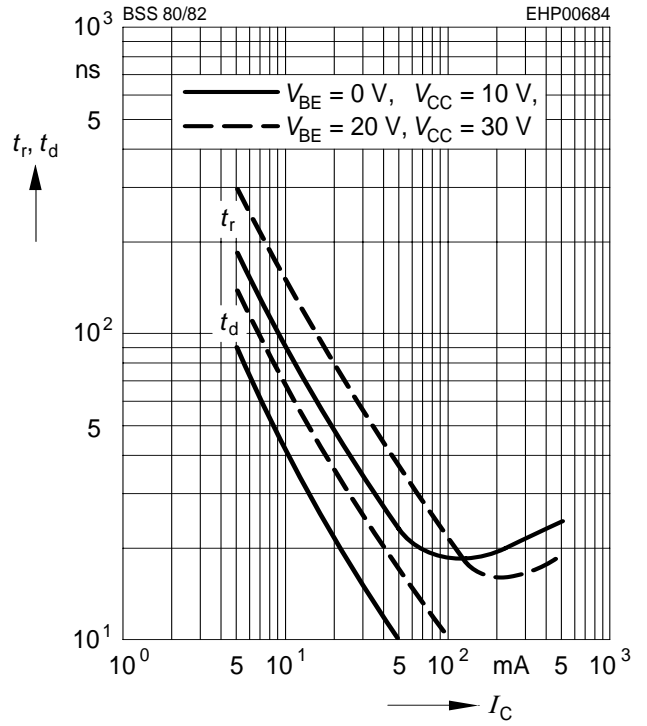
$V_{CE} = 20\text{V}$



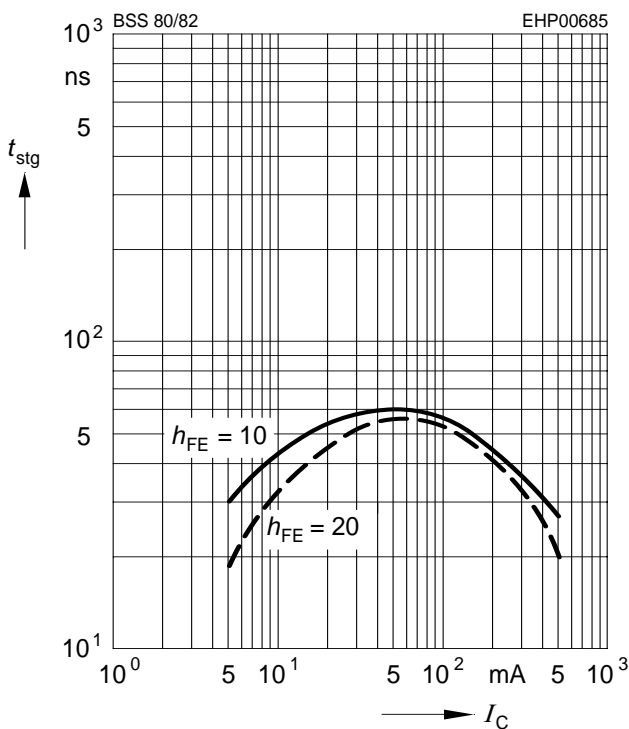
**Saturation voltage**  $I_C = f(V_{BEsat}, V_{CEsat})$   
 $h_{FE} = 10$



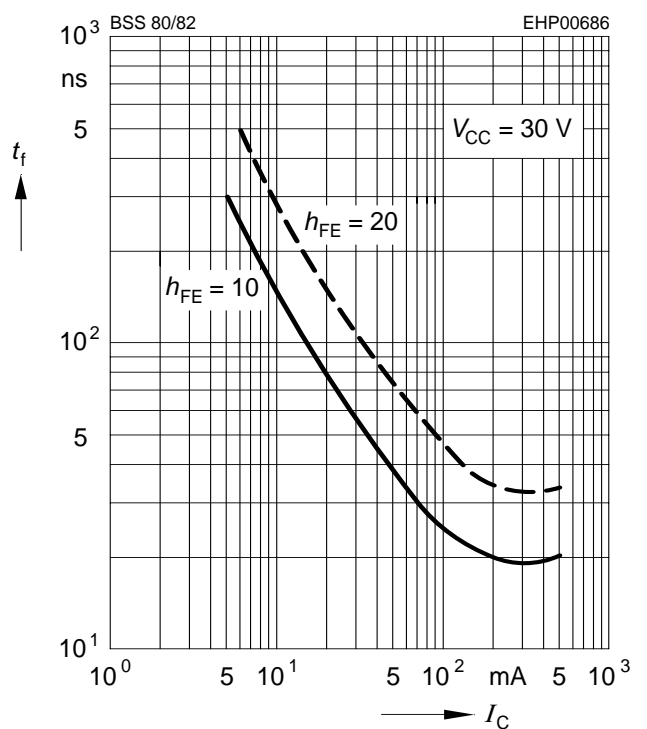
**Delay time**  $t_d = f(I_C)$   
**Rise time**  $t_r = f(I_C)$



**Storage time**  $t_{stg} = f(I_C)$

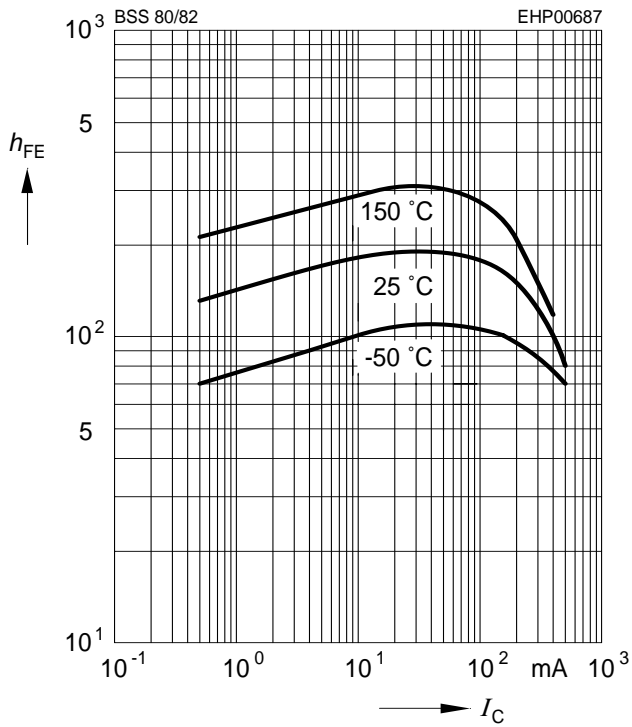


**Fall time**  $t_f = f(I_C)$

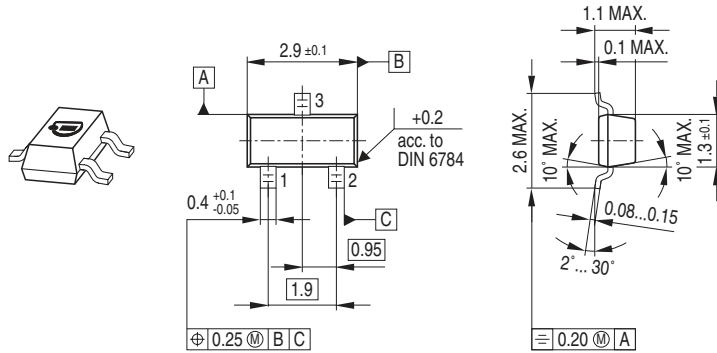


**DC current gain  $h_{FE} = f(I_C)$**

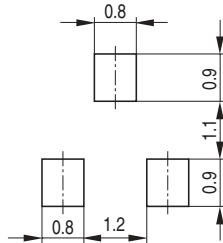
$V_{CE} = 10V$



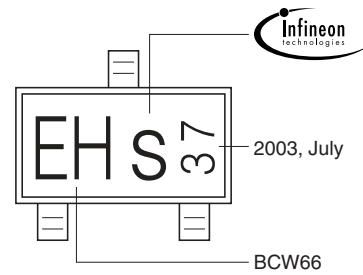
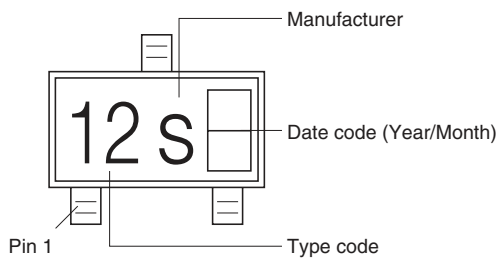
### Package Outline



### Foot Print



### Marking Layout

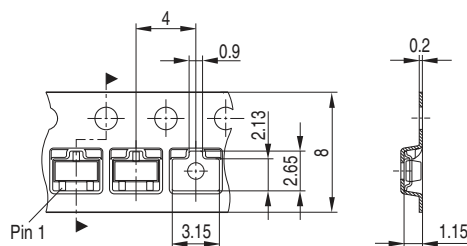


Example

### Packing

Code E6327: Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel

Code E6433: Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



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