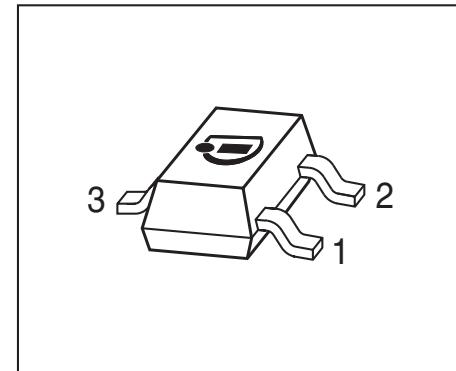


NPN Silicon High-Voltage Transistors

- Suitable for video output stages in TV sets and switching power supplies
- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary type: BFN27 (PNP)
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



Type	Marking	Pin Configuration			Package
BFN24	FHs	1=B	2=E	3=C	SOT23
BFN26	FJs	1=B	2=E	3=C	SOT23

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage BFN24	V_{CEO}	250	V
BFN26		300	
Collector-base voltage BFN24	V_{CBO}	250	
BFN26		300	
Emitter-base voltage	V_{EBO}	6	
Collector current	I_C	200	mA
Peak collector current, $t_p \leq 10$ ms	I_{CM}	500	
Base current	I_B	100	
Peak base current	I_{BM}	200	
Total power dissipation- $T_S \leq 74$ °C	P_{tot}	360	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}	≤ 210	K/W

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$, BFN24 $I_C = 1 \text{ mA}, I_B = 0$, BFN26	$V_{(\text{BR})\text{CEO}}$	250 300	- -	- -	V
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_E = 0$, BFN24 $I_C = 100 \mu\text{A}, I_E = 0$, BFN26	$V_{(\text{BR})\text{CBO}}$	250 300	- -	- -	
Emitter-base breakdown voltage $I_E = 100 \mu\text{A}, I_C = 0$	$V_{(\text{BR})\text{EBO}}$	6	-	-	
Collector-base cutoff current $V_{CB} = 200 \text{ V}, I_E = 0$, BFN24 $V_{CB} = 250 \text{ V}, I_E = 0$, BFN26 $V_{CB} = 200 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$, BFN24 $V_{CB} = 250 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$, BFN26	I_{CBO}	- - - -	- - - -	0.1 0.1 20 20	μA
Emitter-base cutoff current $V_{EB} = 5 \text{ V}, I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain ²⁾ $I_C = 1 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 30 \text{ mA}, V_{CE} = 10 \text{ V}$, BFN24 $I_C = 30 \text{ mA}, V_{CE} = 10 \text{ V}$, BFN26	h_{FE}	25 40 40 30	- - - -	- - - -	-
Collector-emitter saturation voltage ²⁾ $I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$, BFN24 $I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$, BFN26	$V_{CE\text{sat}}$	- -	- -	0.4 0.5	V
Base emitter saturation voltage ²⁾ $I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$	$V_{BE\text{sat}}$	-	-	0.9	

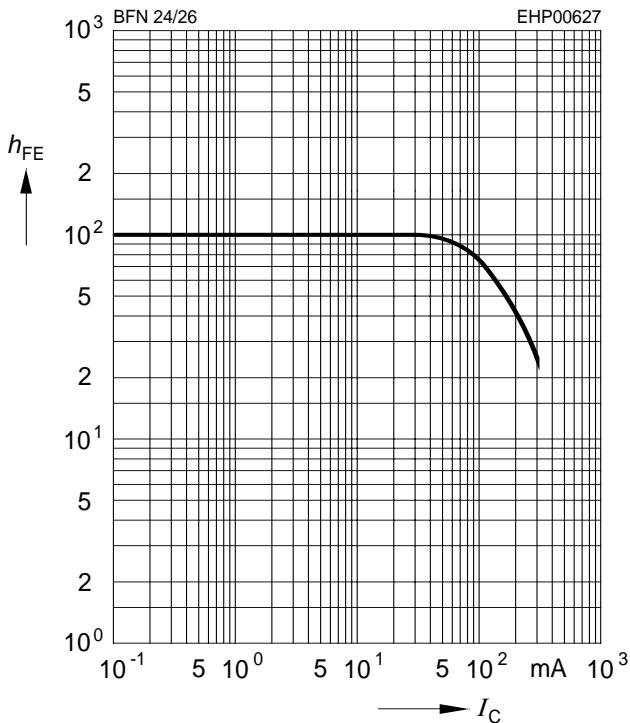
¹⁾For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

²⁾Pulse test: $t < 300\mu\text{s}$; $D < 2\%$

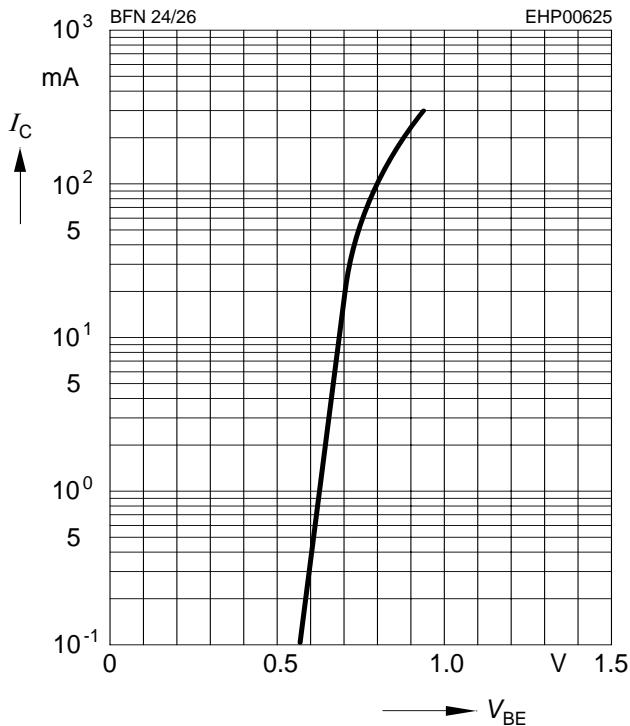
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency $I_C = 20 \text{ mA}, V_{CE} = 10 \text{ V}, f = 20 \text{ MHz}$	f_T	-	70	-	MHz
Collector-base capacitance $V_{CB} = 30 \text{ V}, f = 1 \text{ MHz}$	C_{cb}	-	1.5	-	pF

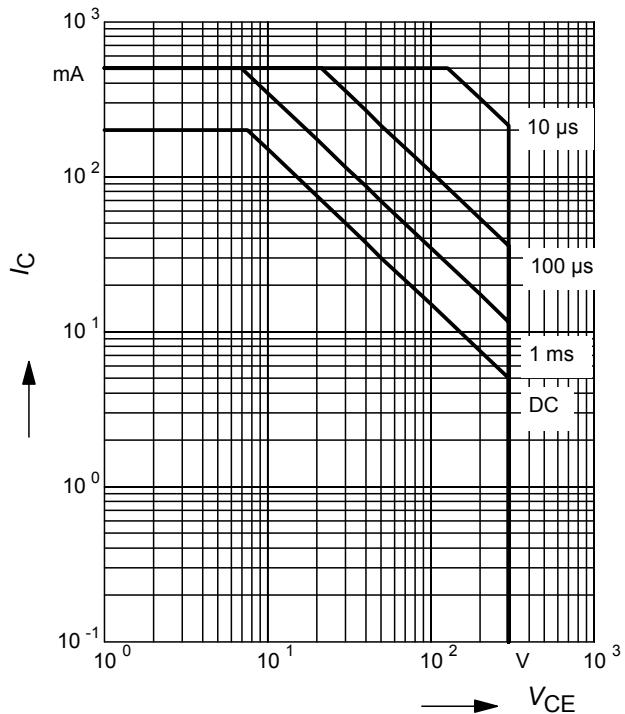
DC current gain $h_{FE} = f(I_C)$
 $V_{CE} = 10 \text{ V}$



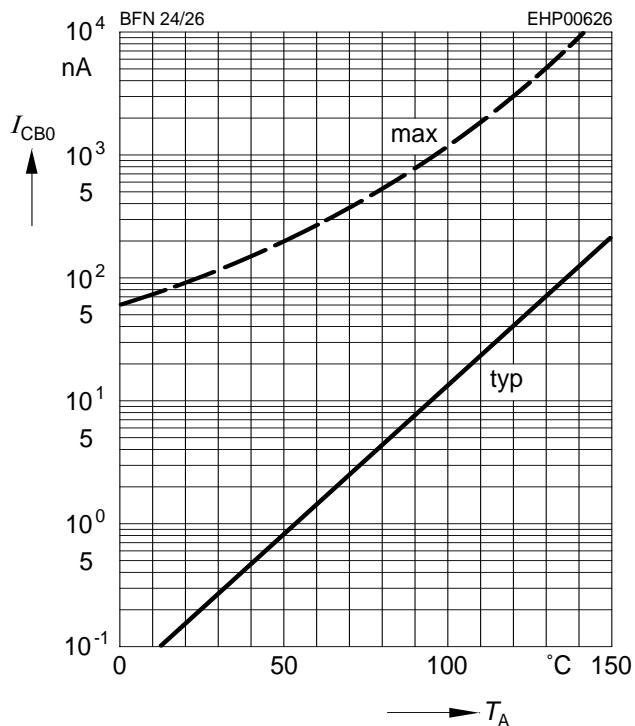
Collector current $I_C = f(V_{BE})$
 $V_{CE} = 10 \text{ V}$



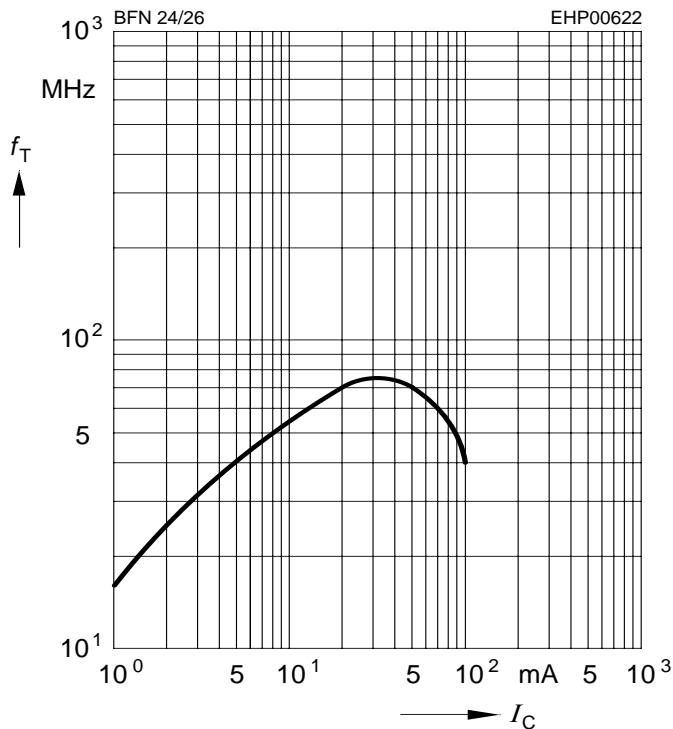
Operating range $I_C = f(V_{CEO})$
 $T_A = 25^\circ\text{C}, D = 0$



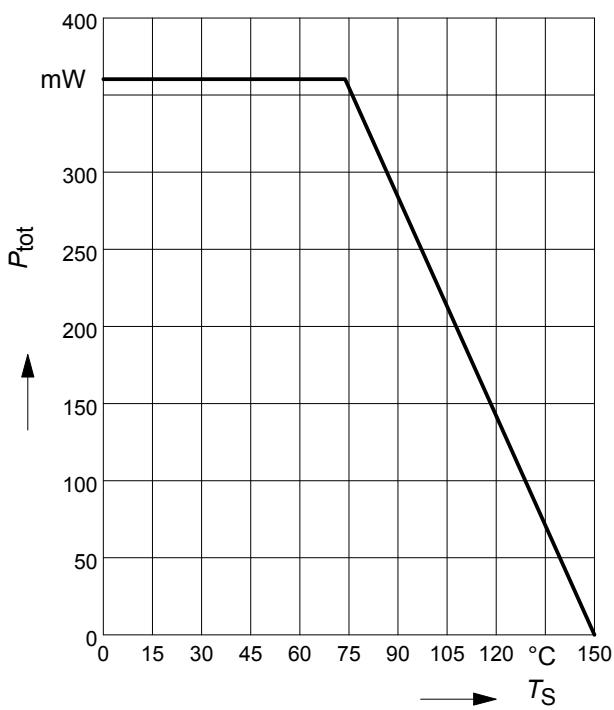
Collector cutoff current $I_{CBO} = f(T_A)$
 $V_{CB} = 200 \text{ V}$



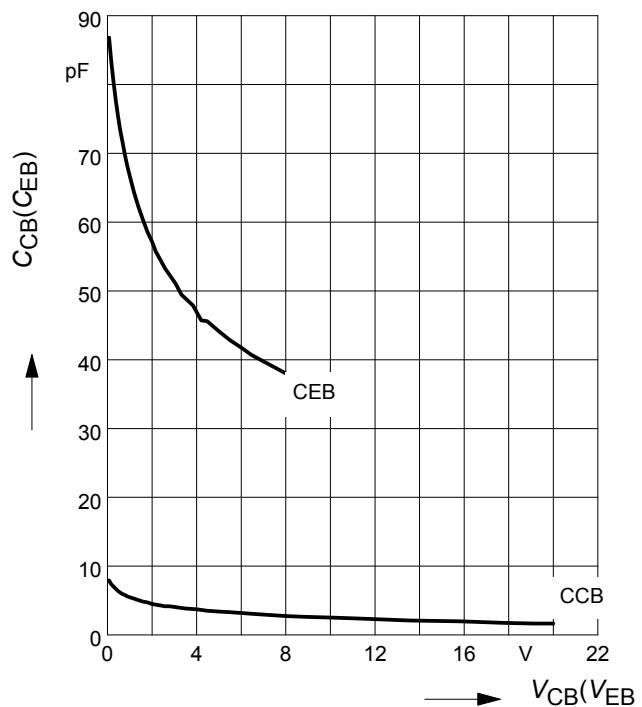
Transition frequency $f_T = f(I_C)$
 V_{CE} = parameter in V, $f = 2$ GHz



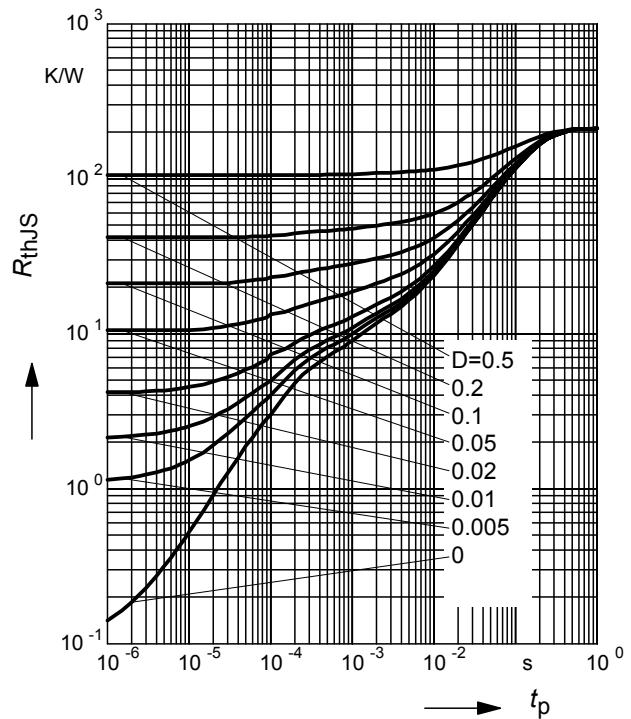
Total power dissipation $P_{tot} = f(T_S)$



Collector-base capacitance $C_{cb} = f(V_{CB})$
Emitter-base capacitance $C_{eb} = f(V_{EB})$

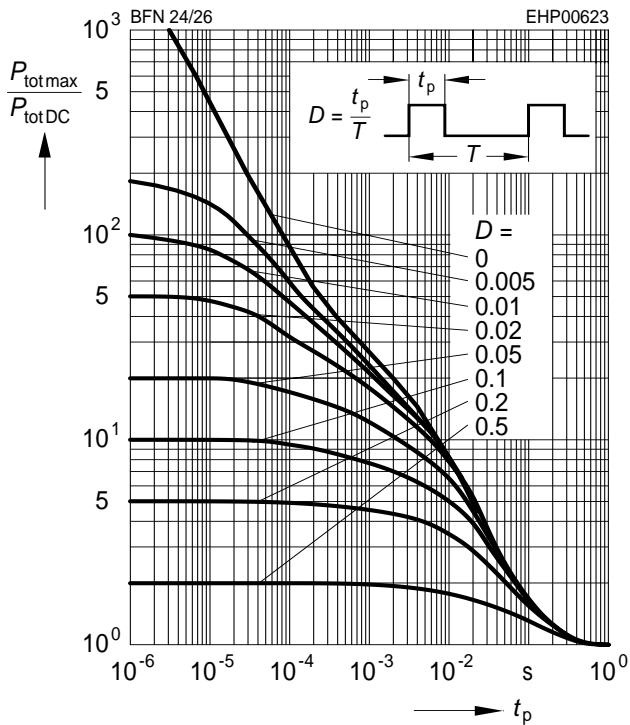


Permissible Pulse Load $R_{thJS} = f(t_p)$

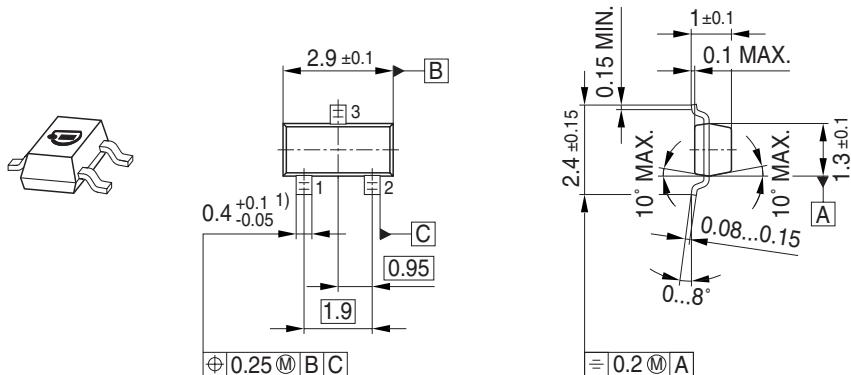


Permissible Pulse Load

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

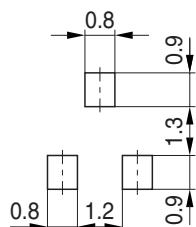


Package Outline

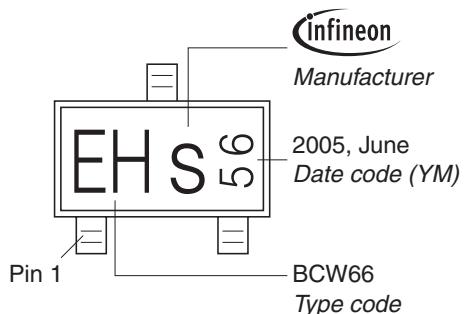


1) Lead width can be 0.6 max. in dambar area

Foot Print

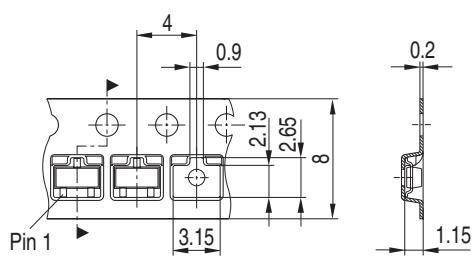


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



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