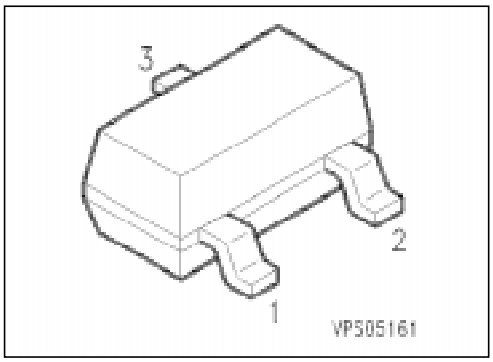
SIEMENS

NPN Silicon High-Voltage Transistors

BFN 24
BFN 26

- Suitable for video output stages in TV sets and switching power supplies
- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary types: BFN 25, BFN 27 (PNP)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1]
BFN 24 BFN 26	FHs FJs	Q62702-F1065 Q62702-F976	B	E	C	SOT-23

Maximum Ratings

Parameter	Symbol	Values BFN 24	BFN 26	Unit
Collector-emitter voltage	V_{CE0}	250	300	V
Collector-base voltage	V_{CB0}	250	300	
Emitter-base voltage	V_{EB0}	5		
Collector current	I_C	200		mA
Peak collector current	I_{CM}	500		
Base current	I_B	100		
Peak base current	I_{BM}	200		
Total power dissipation, T_S = 74 ˚C	P_{tot}	360		mW
Junction temperature	T_j	150		˚C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 280	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 210	

1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

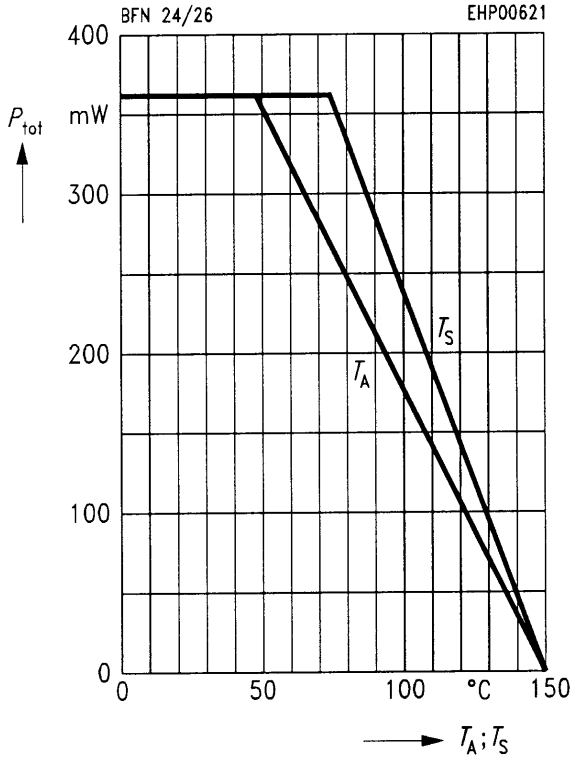
Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

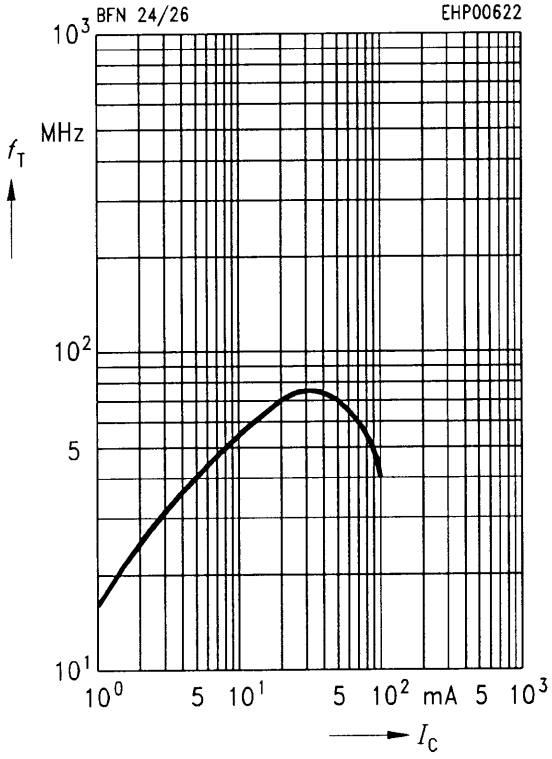
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage	$V_{(BR)CE0}$				V
I_C = 1 mA BFN 24		250	–	–	
BFN 26		300	–	–	
Collector-base breakdown voltage	$V_{(BR)CB0}$				
I_C = 100 µA BFN 24		250	–	–	
BFN 26		300	–	–	
Emitter-base breakdown voltage	$V_{(BR)EB0}$	5	–	–	
I_E = 100 µA					
Collector-base cutoff current	I_{CB0}				
V_{CB} = 200 V BFN 24		–	–	100	nA
V_{CB} = 250 V BFN 26		–	–	100	nA
V_{CB} = 200 V, T_A = 150 °C BFN 24		–	–	20	µA
V_{CB} = 250 V, T_A = 150 °C BFN 26		–	–	20	µA
Emitter-base cutoff current	I_{EB0}	–	–	100	nA
V_{EB} = 3 V					
DC current gain	h_{FE}				–
I_C = 1 mA, V_{CE} = 10 V		25	–	–	
I_C = 10 mA, V_{CE} = 10 V[1)]		40	–	–	
I_C = 30 mA, V_{CE} = 10 V[1)] BFN 24		40	–	–	
BFN 26		30	–	–	
Collector-emitter saturation voltage[1)]	V_{CEsat}				V
I_C = 20 mA, I_B = 2 mA BFN 24		–	–	0.4	
BFN 26		–	–	0.5	
Base-emitter saturation voltage[1)]	V_{BEsat}	–	–	0.9	
I_C = 20 mA, I_B = 2 mA					
AC characteristics					
Transition frequency	f_T	–	70	–	MHz
I_C = 20 mA, V_{CE} = 10 V, f = 20 MHz					
Output capacitance	C_{obo}	–	1.5	–	pF
V_{CB} = 30 V, f = 1 MHz					

1) Pulse test conditions: $t \leq 300$ µs, D = 2 %.

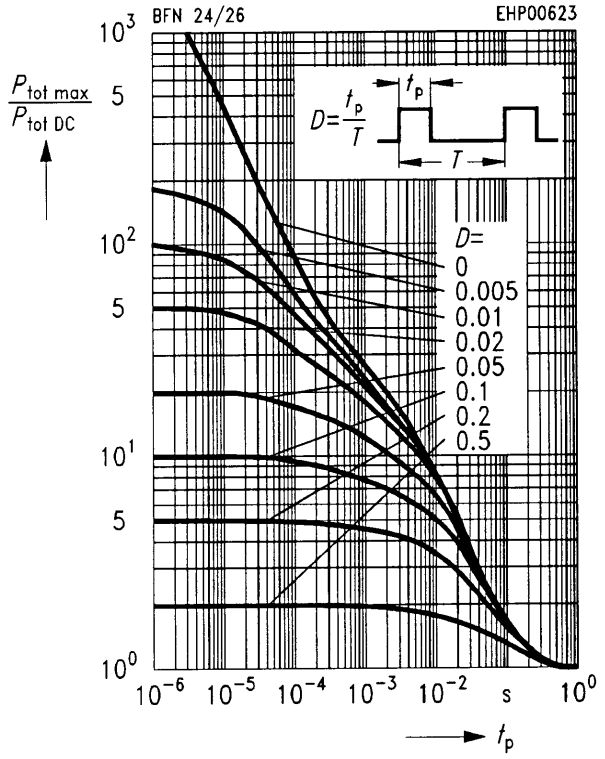
Total power dissipation $P_{tot} = f(T_A^*; T_S)$
* Package mounted on epoxy



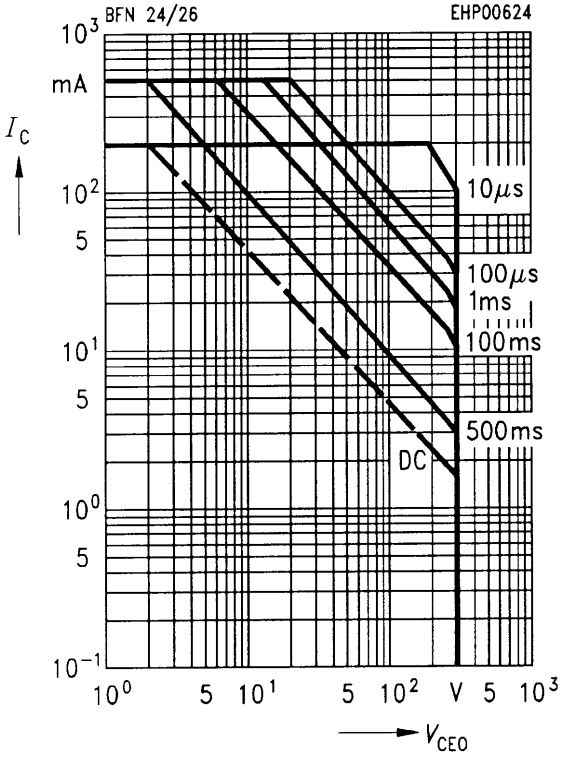
Transition frequency $f_T = f(I_C)$
V_{CE} = 10 V



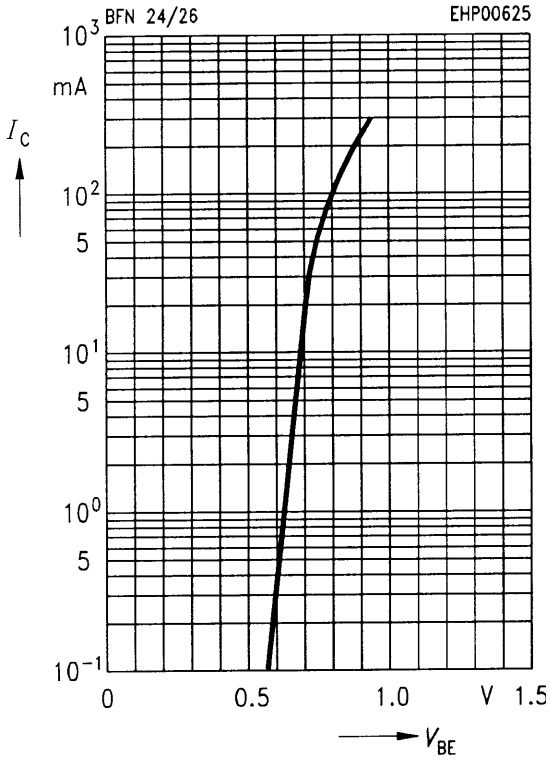
Permissible pulse load $P_{tot\,max} / P_{tot\,DC} = f(t_p)$



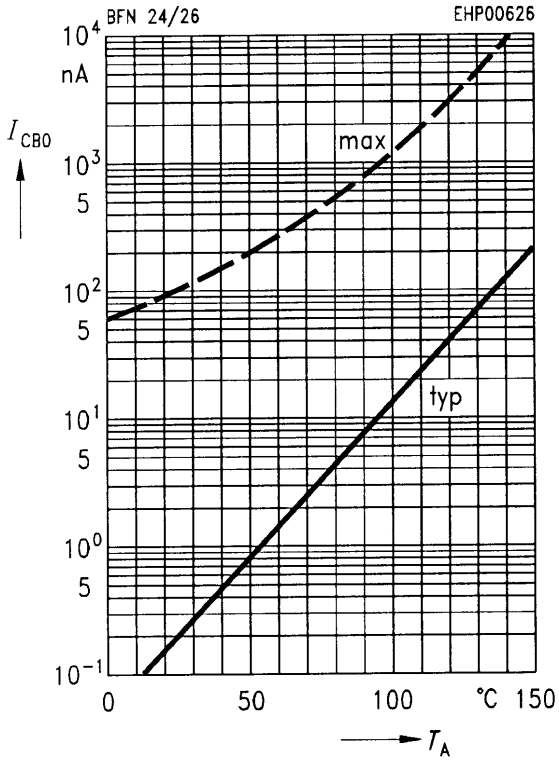
Operating range $I_C = f(V_{CE0})$
T_A = 25 °C, D = 0



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



Collector cutoff current $I_{CB0} = f(T_A)$
V_{CB} = 200 V



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