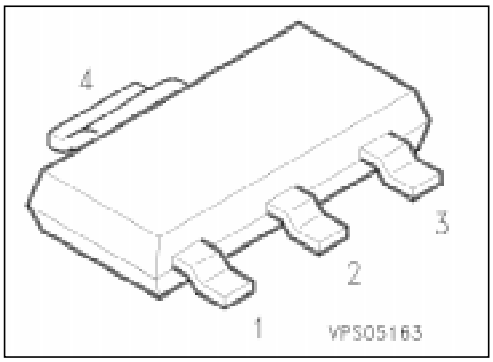
SIEMENS

PNP Silicon High-Voltage Transistors

BF 721
BF 723

- Suitable for video output stages in TV sets and switching power supplies
- High breakdown voltage
- Low collector-emitter saturation voltage
- Low capacitance
- Complementary types: BF 720/722 (NPN)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	4	Package[1]
BF 721 BF 723	BF 721 BF 723	Q62702-F1239 Q62702-F1309	B	C	E	C	SOT-223

Maximum Ratings

Parameter	Symbol	Values BF 721	BF 723	Unit
Collector-emitter voltage	V_{CE0} V_{CER}	– 300	250 –	V
Collector-base voltage	V_{CB0}	300	250	
Emitter-base voltage	V_{EB0}	5	5	
Collector current	I_C	50		mA
Peak collector current	I_{CM}	100		
Total power dissipation, $T_S \leq 110$ °C[2]	P_{tot}	1.5		W
Junction temperature	T_j	150		°C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 87	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 27	

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

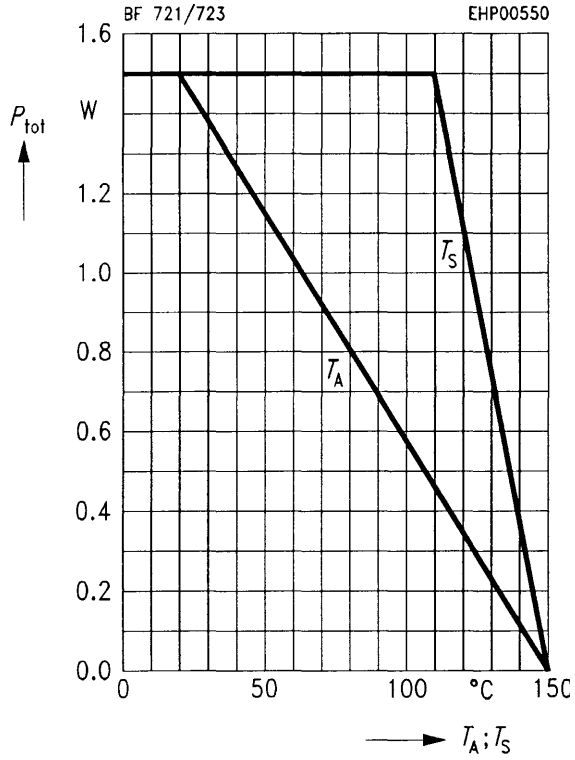
Electrical Characteristics

at T_A = 25 ˚C, unless otherwise specified.

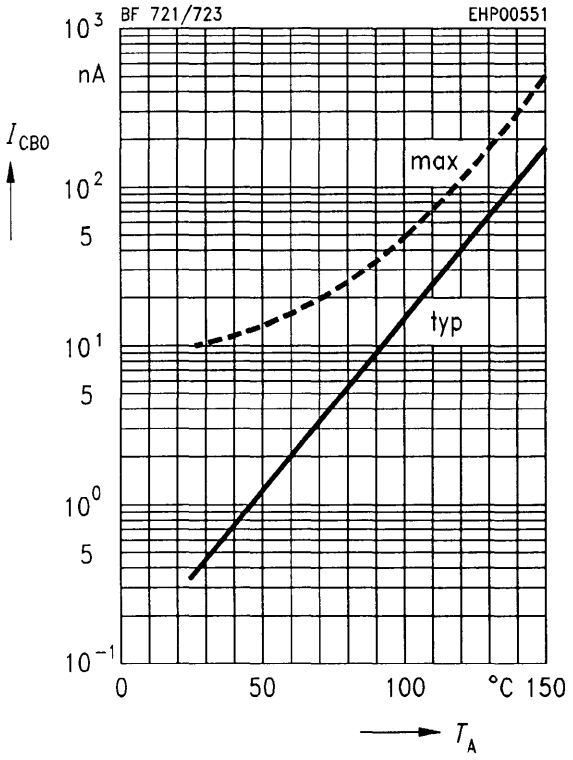
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 1 mA, I_B = 0 BF 723	$V_{(BR)CE0}$	250	–	–	V
Collector-emitter breakdown voltage I_C = 10 µA, R_{BE} = 2.7 kΩ BF 721	$V_{(BR)CER}$	300	–	–	
Collector-base breakdown voltage I_C = 10 µA, I_B = 0 BF 721 BF 723	$V_{(BR)CB0}$	 300 250	 – –	 – –	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EB0}$	5	–	–	
Collector-base cutoff current V_{CB} = 200 V, I_E = 0	I_{CB0}	–	–	10	nA
Collector-emitter cutoff current V_{CE} = 200 V, R_{BE} = 2.7 kΩ V_{CE} = 200 V, R_{BE} = 2.7 kΩ, T_A = 150 ˚C	I_{CER}	 – –	 – –	 50 10	 nA µA
Emitter-base cutoff current V_{EB} = 5 V, I_C = 0	I_{EB0}	–	–	10	µA
DC current gain[1)] I_C = 25 mA, V_{CE} = 20 V	h_{FE}	50	–	–	–
Collector-emitter saturation voltage I_C = 30 mA, I_B = 5 mA	V_{CEsat}	–	–	0.6	V
AC characteristics					
Transition frequency I_C = 10 mA, V_{CE} = 10 V, f = 100 MHz	f_T	–	100	–	MHz
Collector-base capacitance V_{CB} = 30 V, I_C = 0, f = 1 MHz	C_{obo}	–	0.8	–	pF

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

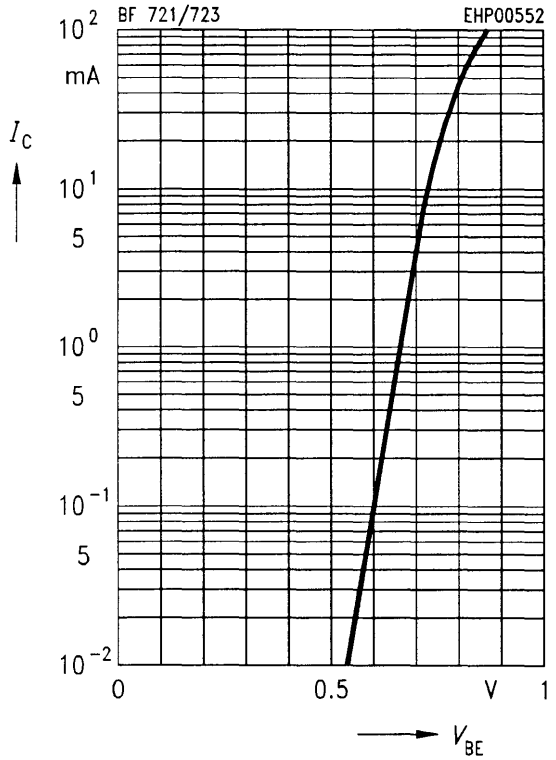
Total power dissipation $P_{tot} = f(T_A^*; T_S)$
* Package mounted on epoxy



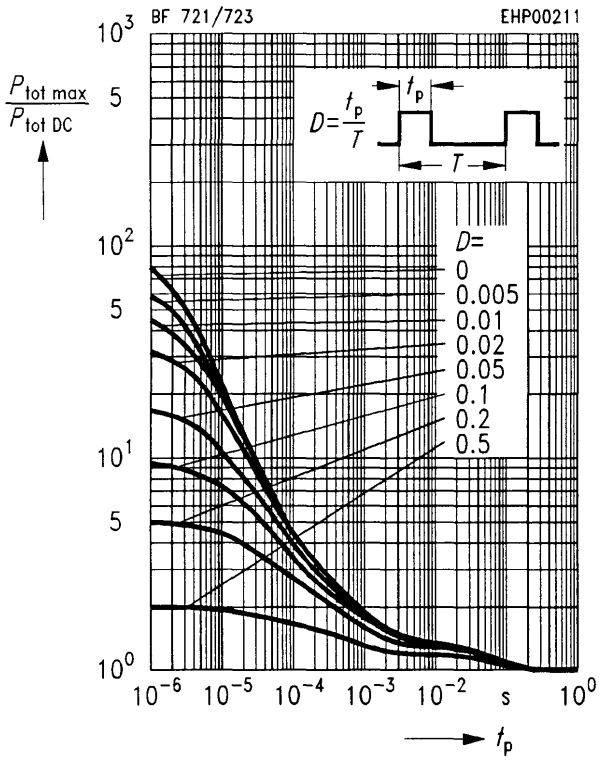
Collector cutoff current $I_{CB0} = f(T_A)$
V_{CB} = 200 V



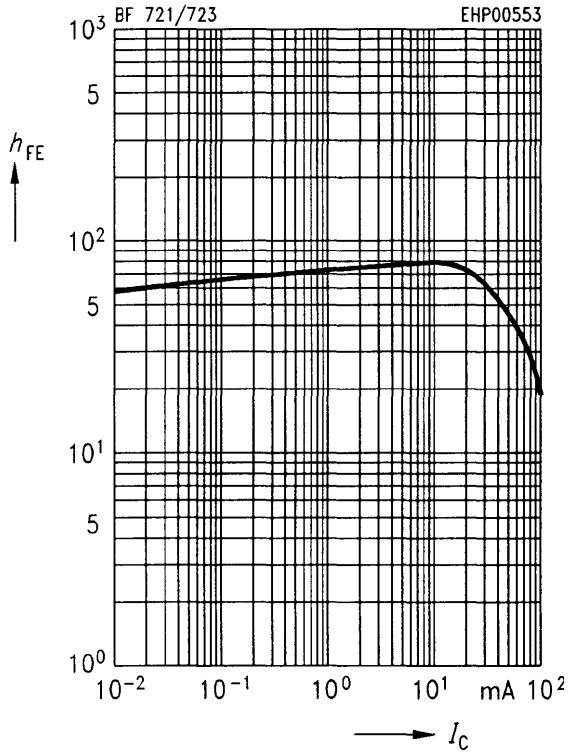
Collector current $I_C = f(V_{BE})$
V_{CE} = 20 V



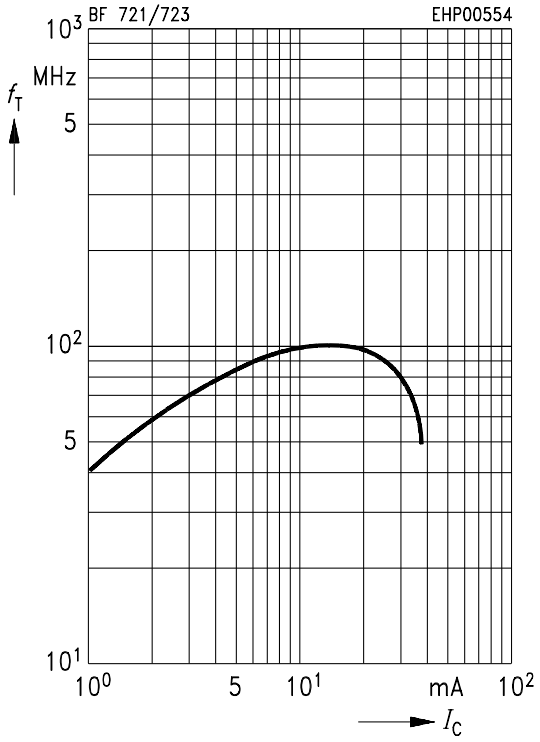
Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f(t_p)$



DC current gain $h_{FE} = f(I_C)$
V_{CE} = 20 V



Transition frequency $f_T = f(I_C)$
V_{CE} = 10 V, f = 100 MHz



Collector-base capacitance $C_{obo} = f(V_{CB})$
I_C = 0, f = 1 MHz