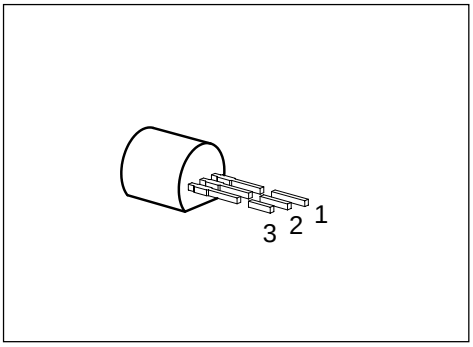
SIEMENS

NPN Silicon Transistors with High Reverse Voltage

BFP 22
BFP 25

- High breakdown voltage
- Low collector-emitter saturation voltage
- Low capacitance
- Complementary types: BFP 23, BFP 26 (PNP)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1]
BFP 22 BFP 25	–	Q62702-F621 Q62702-F721	E	B	C	TO-92

Maximum Ratings

Parameter	Symbol	Values BFP 22	BFP 25	Unit
Collector-emitter voltage	V_{CE0}	200	300	V
Collector-base voltage	V_{CB0}	200	300	
Emitter-base voltage	V_{EB0}	6		
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, $T_C = 66$ °C	P_{tot}	625		mW
Junction temperature	T_j	150		°C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient	$R_{th\ JA}$	≤ 200	K/W
Junction - case[2]	$R_{th\ JC}$	≤ 135	

1) For detailed information see chapter Package Outlines.
2) Mounted on Al heat sink 15 mm × 25 mm × 0.5 mm.

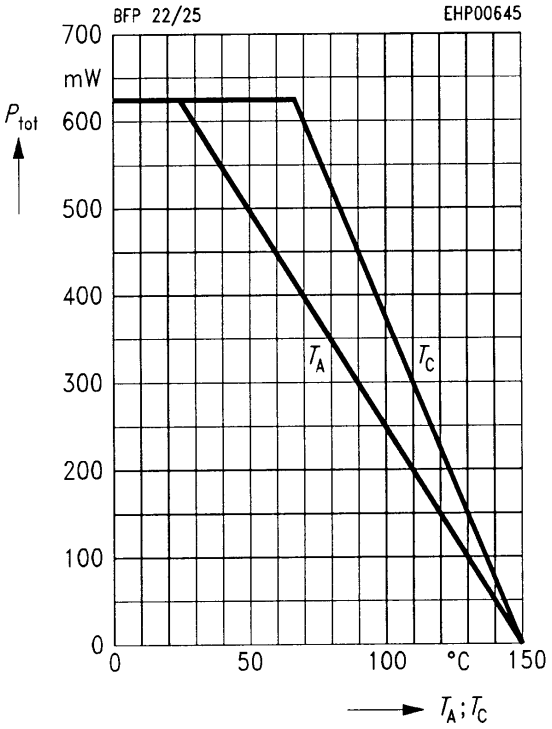
Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

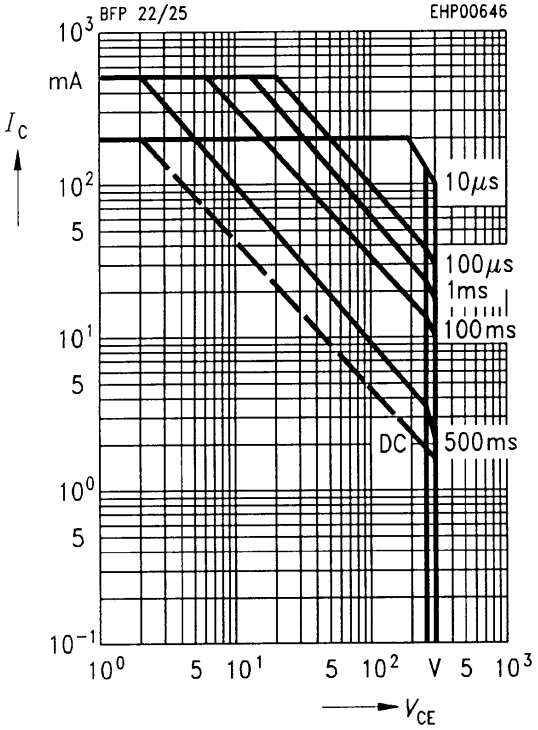
Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Collector-emitter breakdown voltage		$V_{(BR)CE0}$				V
I_C = 1 mA	BFP 22		200	–	–	
	BFP 25		300	–	–	
Collector-base breakdown voltage		$V_{(BR)CB0}$				
I_C = 100 µA	BFP 22		200	–	–	
	BFP 25		300	–	–	
Emitter-base breakdown voltage		$V_{(BR)EB0}$	6	–	–	
I_E = 100 µA						
Collector-base cutoff current		I_{CB0}				
V_{CB} = 160 V	BFP 22		–	–	100	nA
V_{CB} = 250 V	BFP 25		–	–	100	nA
V_{CB} = 160 V, T_A = 150 °C	BFP 22		–	–	20	µA
V_{CB} = 250 V, T_A = 150 °C	BFP 25		–	–	20	µA
Emitter-base cutoff current		I_{EB0}	–	–	100	nA
V_{EB} = 4 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)]	BFP 22		50	–	–	
	BFP 25		40	–	–	
Collector-emitter saturation voltage[1)]		V_{CEsat}				V
I_C = 20 mA, I_B = 2 mA	BFP 22		–	–	0.4	
	BFP 25		–	–	0.5	
Base-emitter saturation voltage[1)]		V_{BEsat}	–	–	0.9	
I_C = 20 A, 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, $D \leq 2$ %.

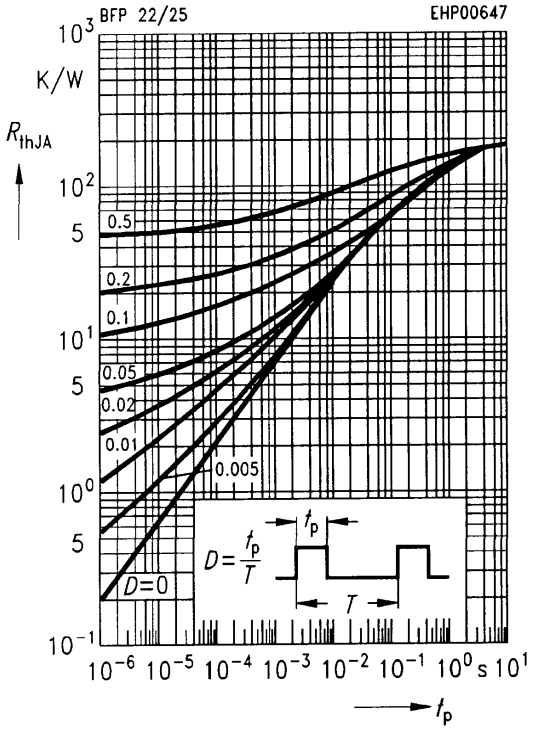
Total power dissipation $P_{tot} = f(T_A; T_C)$



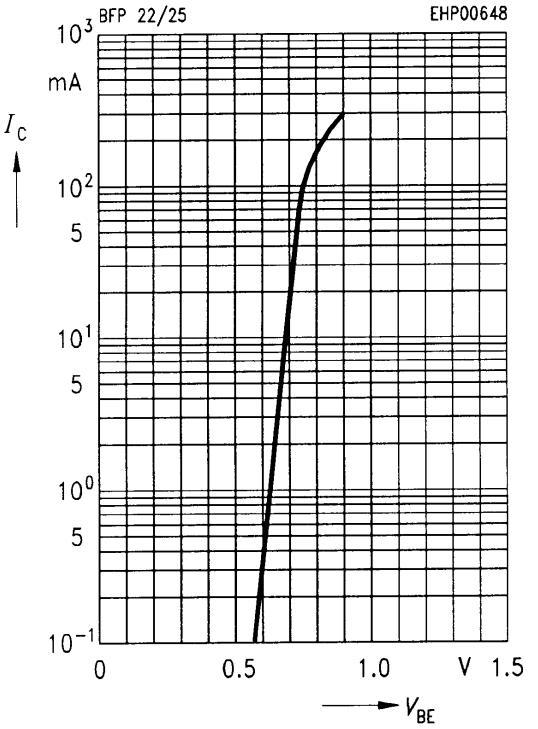
Operating range $I_C = f(V_{CE})$
$D = 0$, $T_A = 25$ °C



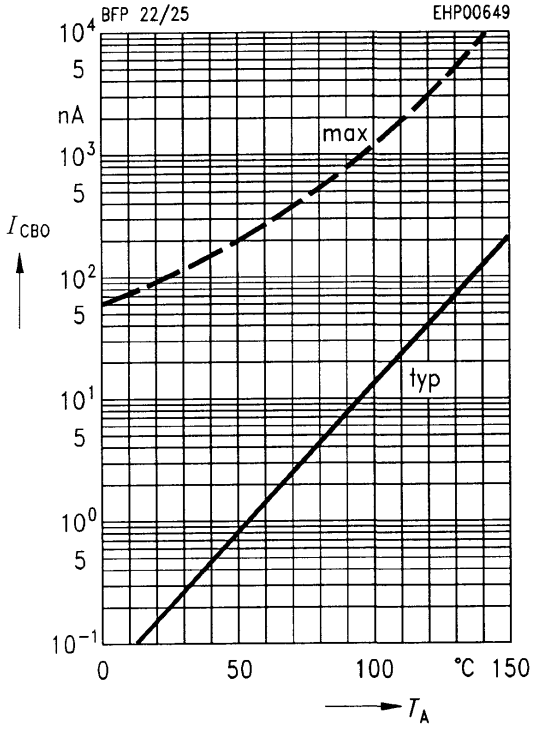
Permissible pulse load $R_{thJA} = f(t_p)$



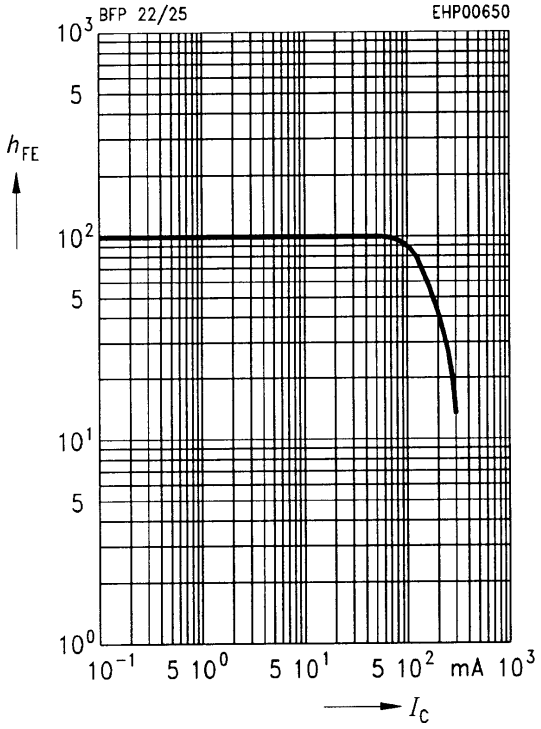
Collector current $I_C = f(V_{BE})$
V_{CE} = 10 V, T_A = 25 °C



Collector cutoff current $I_{CB0} = f(T)$
V_{CB} = 160 V, 250 V



DC current gain $h_{FE} = f(I_C)$
V_{CE} = 10 V, T_A = 25 °C



Transition frequency $f_T = f(I_C)$
V_{CE} = 10 V, f = 20 MHz