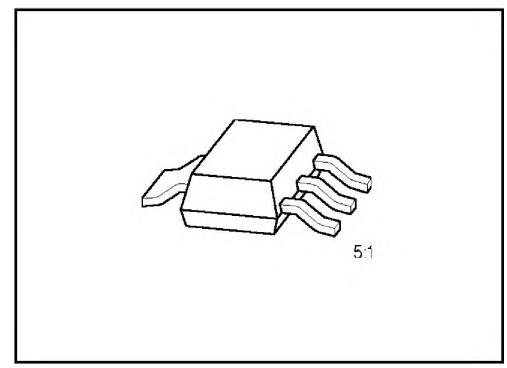
SIEMENS

NPN Silicon High-Voltage Transistors

PZTA 42
PZTA 43

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary types: PZTA 92, PZTA 93 (PNP)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	4	Package[1]
PZTA 42 PZTA 43	PZTA 42 PZTA 43	Q62702-Z2035 Q62702-Z2036	B	C	E	C	SOT-223

Maximum Ratings

Parameter	Symbol	Values PZTA 42	PZTA 43	Unit
Collector-emitter voltage	V_{CE0}	300	200	V
Collector-base voltage	V_{CB0}	300	200	
Emitter-base voltage	V_{EB0}	6		
Collector current	I_C	500		mA
Base current	I_B	100		
Total power dissipation, T_S = 124 °C	P_{tot}	1.5		W
Junction temperature	T_j	150		°C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 72	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 17	

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

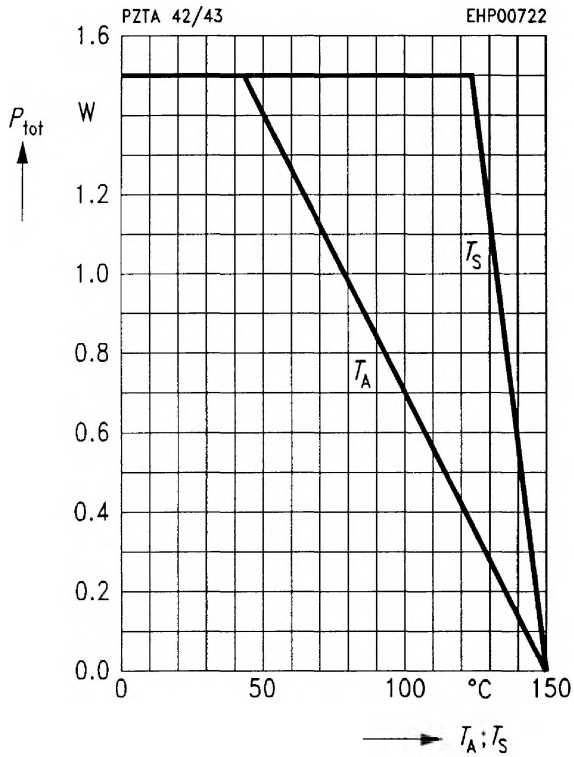
Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

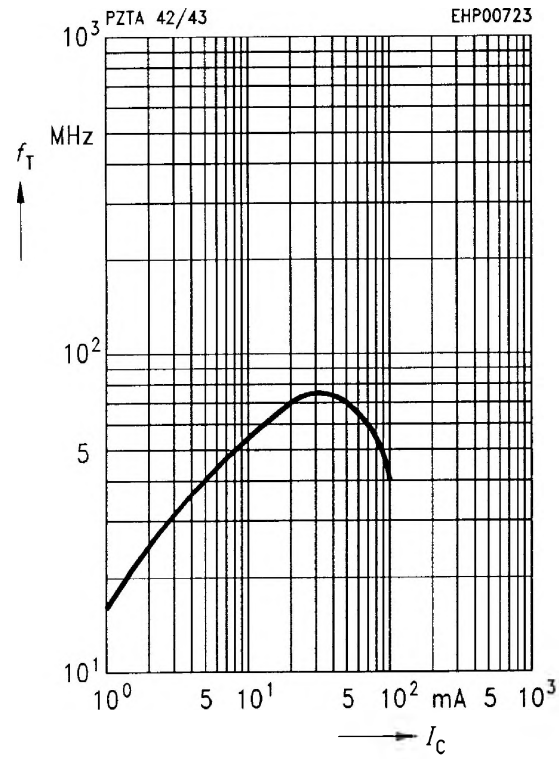
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage	$V_{(BR)CE0}$				V
I_C = 1 mA, I_B = 0 PZTA 42		300	–	–	
PZTA 43		200	–	–	
Collector-base breakdown voltage	$V_{(BR)CB0}$				
I_C = 100 µA, I_B = 0 PZTA 42		300	–	–	
PZTA 43		200	–	–	
Emitter-base breakdown voltage	$V_{(BR)EB0}$	6	–	–	
I_E = 100 µA, I_C = 0					
Collector-base cutoff current	I_{CB0}				
V_{CB} = 200 V PZTA 42		–	–	100	nA
V_{CB} = 160 V PZTA 43		–	–	100	nA
V_{CB} = 200 V, T_A = 150 °C PZTA 42		–	–	20	µA
V_{CB} = 160 V, T_A = 150 °C PZTA 43		–	–	20	µA
Emitter-base cutoff current	I_{EB0}	–	–	100	nA
V_{EB} = 3 V, I_C = 0					
DC current gain[1]	h_{FE}				–
I_C = 1 mA, V_{CE} = 10 V		25	–	–	
I_C = 10 mA, V_{CE} = 10 V		40	–	–	
I_C = 30 mA, V_{CE} = 10 V		40	–	–	
Collector-emitter saturation voltage[1]	V_{CEsat}				V
I_C = 20 mA, I_B = 2 mA PZTA 42		–	–	0.5	
PZTA 43		–	–	0.4	
Base-emitter saturation voltage	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 = 100 MHz					
Collector-base capacitance	C_{obo}				pF
V_{CB} = 20 V, f = 1 MHz PZTA 42		–	–	3	
PZTA 43		–	–	4	

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

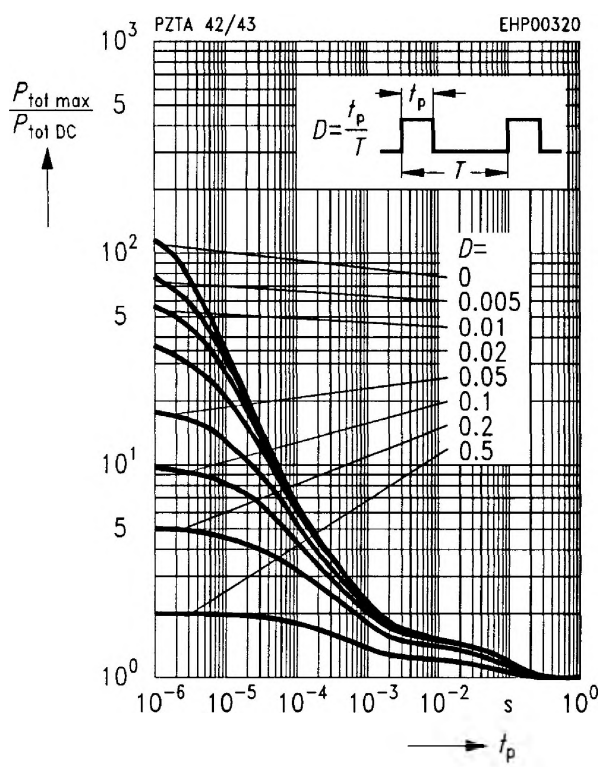
Total power dissipation $P_{tot} = f(T_A^*; T_S)$
* Package mounted on epoxy



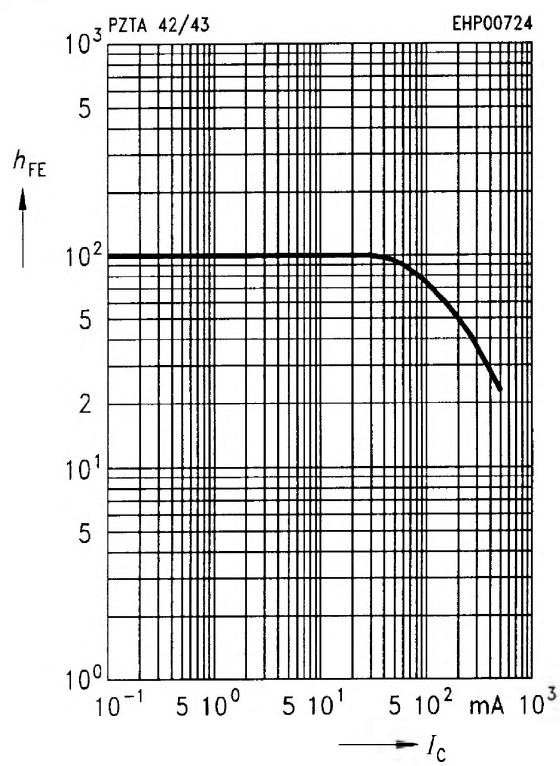
Transition frequency $f_T = f(I_C)$
V_{CE} = 10 V, f = 100 MHz



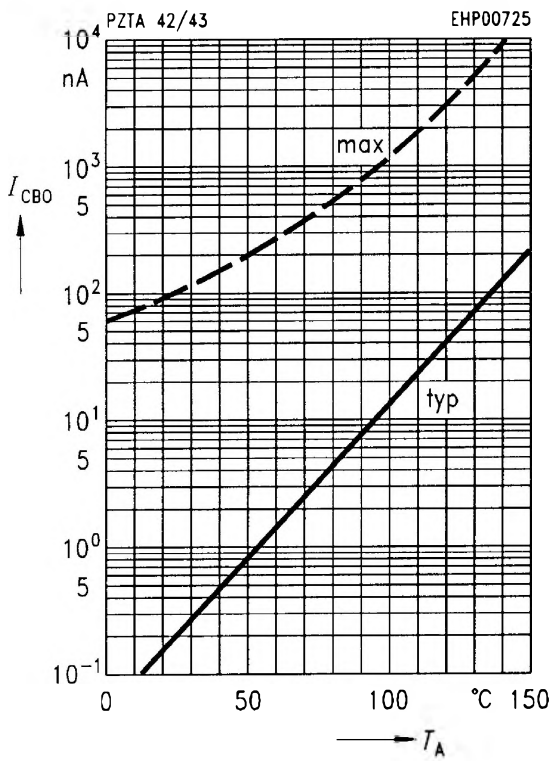
Permissible pulse load $P_{tot\,max} / P_{tot\,DC} = f(t_p)$



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



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



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